Service Manual

CONTENTS

Specifications 2-4
Disassembly Instructions 5
Block Diagram 6
Alignment Instructions 7-15
(1) Alignment For Clock Time Accuracy 7
(2) Alignment For PII Frequency 7
(3) Alignment For AM 2ND Local OSC 8
(4) Alignment For AM 2ND IF 8
(5) Alignment For FM IF 9
(6) Alignment For AM Sensitivity 9
(7) Alignment For FM Sensitivity 10
(8) Alignment For MPX 10
(9) Alignment For Indication Level Of Battery 11
(10) Alignment For Signal Strength Level 12
(11) Alignment For 450kHz Trap 11
(12) Alignment For BFO 13
(13) Alignment For FM Auto Stop Accuracy 13
(14) Alignment For Head Azimuth 14
(15) Alignment For Tape Speed 14
Wiring Diagram 16
Main PCB Top View 17
Main PCB Chip Side 18
Control PCB Top View 19
Control PCB Bottom View 20
Explode View 21
Mechanical Parts List 22-23
Electrical Parts List 24-28
IC Circuit Block Diagram 29-33
ICS' & Transistors' Voltage List 34-40
Semiconductor Lead Identifications 41
Schematic Diagram 42-43

SPECIFICATIONS

FM

TEST ITEM		CONDITION	NOMINAL	LIMIT	UNIT
Tuning Range		Min.	87.5	±0.15	MHz
		Max.	108.0	±0.15	MHz
Intermediate Freq.			10.7	±0.15	MHz
Max. Sens.		90MHz		18	emf dBμ
		98MHz		18	emf dBμ
		106MHz		18	emf dBμ
Useable sens. (S/N 30dB)		90MHz	18	24	emf dBμ
		98MHz	18	24	emf dBμ
		106MHz	18	24	emf dBμ
Calibration		90MHz		±100	KHz
		98MHz		±100	KHz
		106MHz		±100	KHz
Audio Fidelity −3dB 75μs/50μs (W/Pre-emphasis)		98MHz		150	Hz
		98MHz		12K	Hz
3dB Limiting (10mV)		98MHz	14	20	emf dBμ
Image Rejection		106MHz	42	36	dB
I. F. Rejection		90MHz	60	50	dB
Spurious Rejection		98MHz		50	dB
T. H. D. (75KHz. dev.)		98MHz	1.5	3	%
Lowest Battery Voltage		98MHz	3.8	4.2	V
Output Power at 10% T. H. D.		98MHz	800	700	mW
Alter. Channel Select. 100uV		98MHz		25	dB
Stereo Indicator Sens.		98MHz		24	emf dBμ
Tuning Indicator Sens. (2nd.dot)		98MHz		24	emf dBμ
Stereo Separation (1KHz)		98MHz	25	20	emf dBμ
Auto Scanning Stop Sens.		98MHz		24	emf dBμ
Over Load Capacity		98MHz		100	emf dBμ
Am. Suppression (66 emf dBμ)		98MHz		30	emf dBμ
Min. Output		98MHz		3	mV
Tone Control (10KHz)		98MHz	18	15	dB
S/N (22.5KHz Dev.)		98MHz	58	50	dB
Supply Voltage: DC 6V	R.O.: 50mW	Load: 4 ohm	Modulation: 1KHz 22.5KHz Dev.		

LW

TEST ITEM	CONDITION	NOMINAL	LIMIT	UNIT
Tuning Range	Min.	150	±5	KHz
	Max.	519	±5	KHz
Intermediate Freq.	1st. If 2nd. If	55845 450	±1	KHz
Max. Sens.	173KHz		66	dBμ/m
	218KHz		64	dBμ/m
	281KHz		64	dBμ/m
Useable sens. (S/N 20dB)	173KHz	66	72	dBμ/m
	218KHz	64	70	dBμ/m
	218KHz	64	70	dBμ/m
Calibration	173KHz		±5	KHz
	218KHz		±5	KHz
	218KHz		±5	KHz
Lowest Battery Voltage	218KHz	3.8	4.2	V
Tuning Indicator Sens. (2nd.dot)	218KHz		68	emf dBμ
Auto Scanning Stop Sens.	218KHz		70	dBμ/m
S/N Ratio (5mV)	218KHz		24	dB
Supply Voltage: DC 6V R.O.: 50mW	Load: 4 ohm	Modulation: 1KHz 30% Mod.		

MW

TEST ITEM	CONDITION	NOMINAL	LIMIT	UNIT
Tuning Range	Min.	520	±5	KHz
	Max.	1620/1710	±5	KHz
Intermediate Freq.	1st. If 2nd. If	55845 450	±1	KHz
Max. Sens.	600KHz		56	dBμ/m
	1000KHz		54	dBμ/m
	1400KHz		54	dBμ/m
Useable sens.	600KHz	56	62	dBμ/m
	1000KHz	54	60	dBμ/m
	1400KHz	54	60	dBμ/m
Calibration	600KHz		±5	KHz
	1000KHz		±5	KHz
	1400KHz		±5	KHz
Audio Fidelity (−6dB)	1000KHz		150	Hz
	1000KHz		2200	Hz
A. C. A. (±10KHz)	1000KHz		46	dB
T. H. D. (5mV)	1000KHz	1.5	3	%
A.G.C. F.O.M.)	1000KHz		40	dB
Image Rejection	1400KHz		36	dB
I. F. Rejection (450KHz)	1000KHz		46	dB
Whistle Modulation (5mV)	2If/3If		15	%
Lowest Battery Voltage	1000KHz	3.8	4.2	V
Tuning Indicator Sens. (2nd.dot)	1000KHz		58	dBμ/m
Auto Scanning Stop Sens.	1000KHz		60	dBμ/m
S/N Ratio (5mV)	1000KHz		35	dB
Out Put Power at 10% T.H.D.	1000KHz		700	mW
Bandwidth 6dB (Wide)	1000KHz	6	4-8	KHz
Bandwidth 6dB (Narrow)	1000KHz	4.5	2.5-7	KHz
Supply Voltage: DC 6V R.O.: 50mW	Load: 4 ohm	Modulation: 1KHz 30% Mod.		

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Email:- enquiries@mauritron.co.uk

CASSETTE

TEST ITEM	CONDITION	NOMINAL	LIMIT	UNIT
Tape Speed ±3% 3KHz	MTT-111LN-ST		±90	Hz
	MTT-111LN-END		±90	Hz
Wow And Flutter (JIS) Rms	MTT-111LN-ST		0.35	%
	MTT-111LN-END		0.35	%
Play T.H.D.	MTT-112BN	1	3	%
Play S/N Ratio	MTT-112BN	46	40	dB
Play Output Power 10%	MTT-112BN	900	800	mW
Erase Ration W/(1KHz Filter)	MTT-5511		45	dB
	MTT-5561		36	dB
Crosstalk W/(1KHz Filter)	MTT-141N		40	dB
Channel Separation W/(1KHz Filter)	MTT-141N		40	dB
Play Freq Response (1KHz OdB)	MTT-256 125Hz/10KHz		±6	dB
	MTT-356 125Hz/12.5KHz		±6	dB
Lowest Battery Voltage		3.8	4.2	V
REC/Play Freq Responsf AT FM	MTT-5511 125Hz/8KHz		±6	dB
60 emf dBμ 22.5K dev.	MTT-5561 125Hz/10KHz		±6	dB
REC Sens AT FM	MTT-5511 1KHz		+(3-8)	dB
60emf dBμ 22.5 dev	MTT-5511/MTT-118N		+(3-8)	dB
REC Alc AT FM 60emf dBμ dev 22.5/75KHz	MTT-5511 1KHz	−4	−(2-6)	dB
Supply Voltage: 6V R.O.: 50mV	Load: 4 ohm			

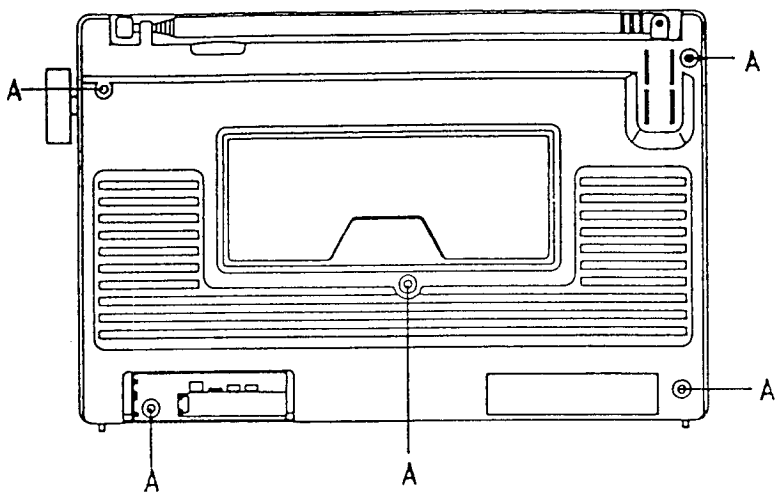
MW

TEST ITEM		CONDITION	NOMINAL	LIMIT	UNIT
Tuning Range		Min.	520	±5	KHz
		Max.	1620/1710	±5	KHz
Intermediate Freq.		1st. If 2nd. If	55845 450	±1	KHz
Max. Sens.		600KHz		56	dBμ/m
		1000KHz		54	dBμ/m
		1400KHz		54	dBμ/m
Useable sens.		600KHz	56	62	dBμ/m
		1000KHz	54	60	dBμ/m
		1400KHz	54	60	dBμ/m
Calibration		600KHz		±5	KHz
		1000KHz		±5	KHz
		1400KHz		±5	KHz
Audio Fidelity (−6dB)		1000KHz		150	Hz
		1000KHz		2200	Hz
A. C. A. (±10KHz)		1000KHz		46	dB
T. H. D. (5mV)		1000KHz	1.5	3	%
A.G.C. F.O.M.)		1000KHz		40	dB
Image Rejection		1400KHz		36	dB
I. F. Rejection (450KHz)		1000KHz		46	dB
Whistle Modulation (5mV)		2If/3If		15	%
Lowest Battery Voltage		1000KHz	3.8	4.2	V
Tuning Indicator Sens. (2nd.dot)		1000KHz		58	dBμ/m
Auto Scanning Stop Sens.		1000KHz		60	dBμ/m
S/N Ratio (5mV)		1000KHz		35	dB
Out Put Power at 10% T.H.D.		1000KHz		700	mW
Bandwidth 6dB (Wide)		1000KHz	6	4-8	KHz
Bandwidth 6dB (Narrow)		1000KHz	4.5	2.5-7	KHz
Supply Voltage: DC 6V	R.O.: 50mW	Load: 4 ohm	Modulation: 1KHz 30% Mod.		

CASSETTE

TEST ITEM	CONDITION	NOMINAL	LIMIT	UNIT
Tape Speed ±3% 3KHz	MTT-111LN-ST		±90	Hz
	MTT-111LN-END		±90	Hz
Wow And Flutter (JIS) Rms	MTT-111LN-ST		0.35	%
	MTT-111LN-END		0.35	%
Play T.H.D.	MTT-112BN	1	3	%
Play S/N Ratio	MTT-112BN	46	40	dB
Play Output Power 10%	MTT-112BN	900	800	mW
Erase Ration W/(1KHz Filter)	MTT-5511		45	dB
	MTT-5561		36	dB
Crosstalk W/(1KHz Filter)	MTT-141N		40	dB
Channel Separation W/(1KHz Filter)	MTT-141N		40	dB
Play Freq Response (1KHz OdB)	MTT-256 125Hz/10KHz		±6	dB
	MTT-356 125Hz/12.5KHz		±6	dB
Lowest Battery Voltage		3.8	4.2	V
REC/Play Freq Responsf AT FM 60 emf dBμ 22.5K dev.	MTT-5511 125Hz/8KHz		±6	dB
	MTT-5561 125Hz/10KHz		±6	dB
REC Sens AT FM 60emf dBμ 22.5 dev	MTT-5511 1KHz		+(3-8)	dB
	MTT-5511/MTT-118N		+(3-8)	dB
REC Alc AT FM 60emf dBμ dev 22.5/75KHz	MTT-5511 1KHz	−4	−(2-6)	dB
Supply Voltage: 6V R.O.: 50mV	Load: 4 ohm			

DISASSEMBLY INSTRUCTIONS



TO REMOVE BACK COVER

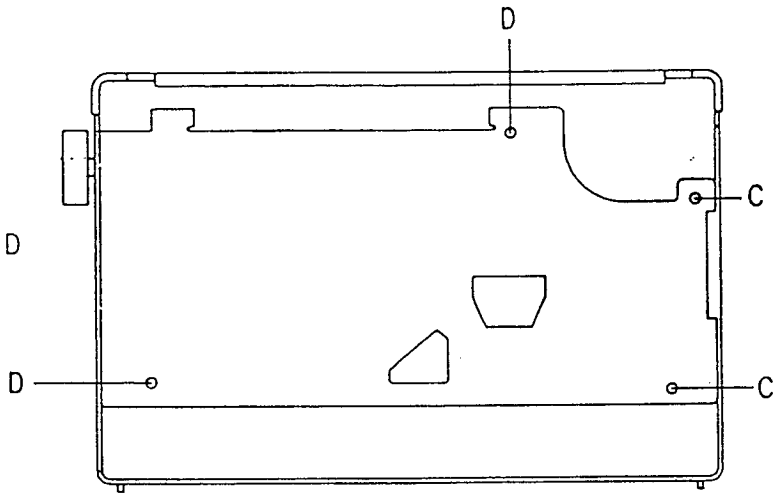
a. Unscrew 5 screw A.

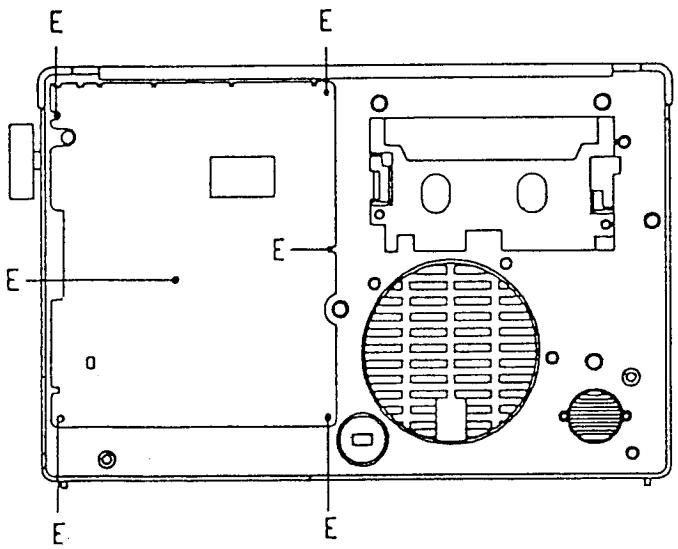
b. Separate front and back cabinet.

TO REMOVE MAIN PCB

a.Remove 2 screw C.

b.Release Main PCB from 2 scrsw D to remove it.

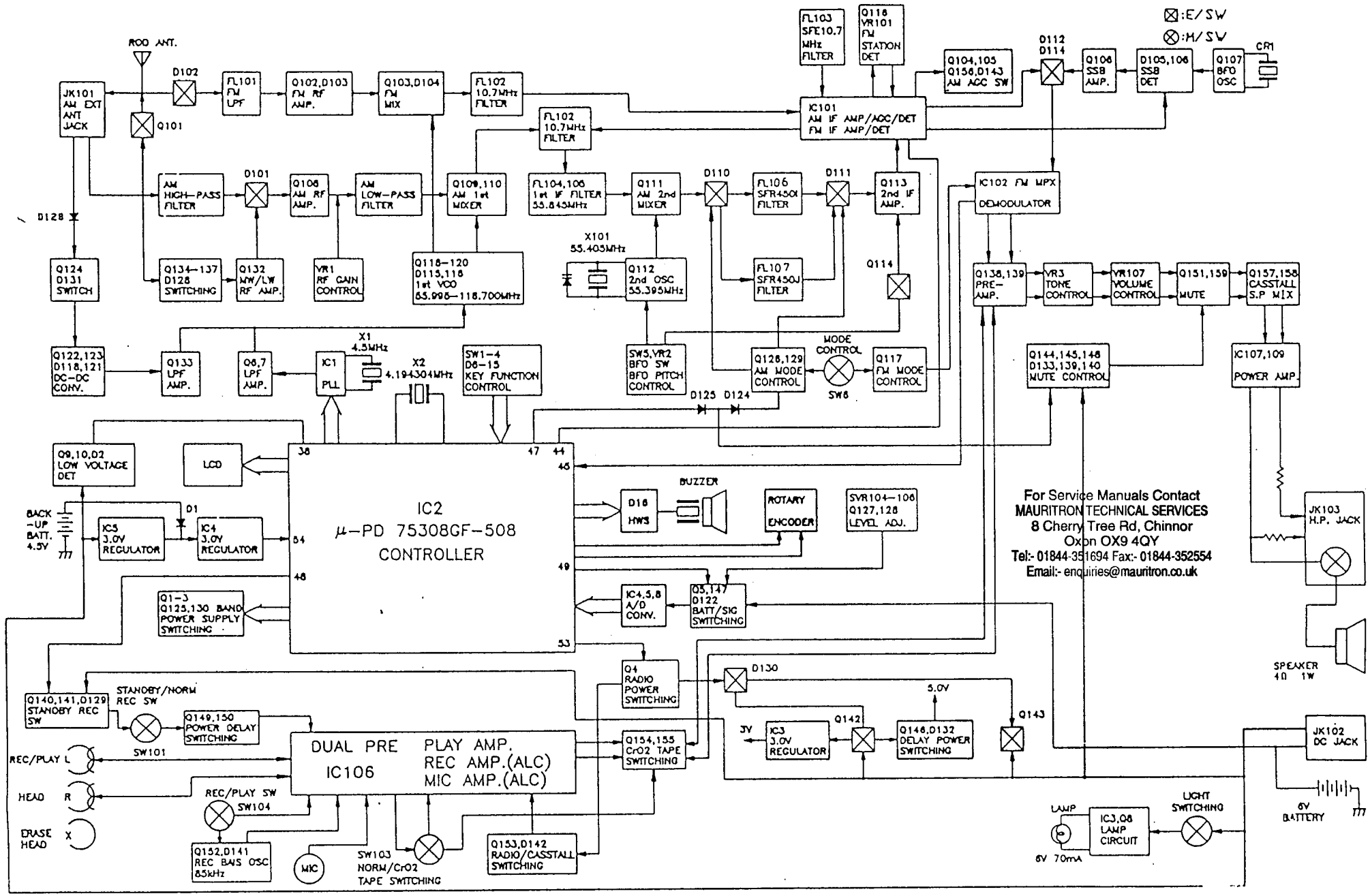




TO REMOVE CONTROL PCB

a. Release Control PCB from 5 scrsw E to remove it.

BLOCK DIAGRAM



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ALIGNMENT INSTRUCTIONS

Note : (1) All test points are shown both on schematic diagram and figures 1-15.
(2) Please load in fresh batteries before any alignment procedures.

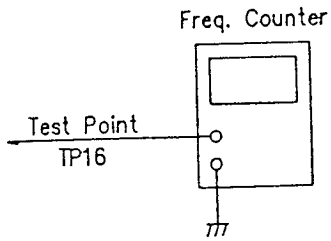
(1) ALIGNMENT FOR CLOCK TIME ACCURACY

a. Required Instrument
Frequency Counter

b. Alignment Procedure

Adjustment	Procedure
VC2	(1) Turn the radio to SLEEP ON mode. (2) Set the SAFETY switch upward to electrically lock all push buttons. (3) Remove the batteries from the RADIO BATTERY compartment ,the monitor TIME BASE signal starts functioning. (4) Connect a frequency counter to TP 16 (PIN48 OF IC2) . (5) Adjust VC2 to reach a reading 524288 ± 4Hz (± 7.6PPM or ± 20sec/month) on counter.

c. Instrument Connection



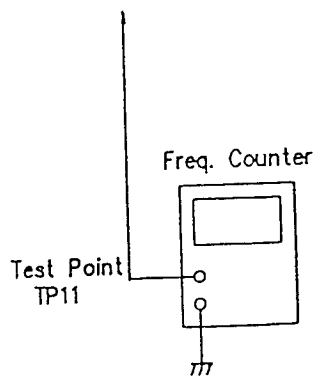
(2) ALIGNMENT FOR PLL FREQUENCY

a. Required Instrument
Frequency Counter

b. Alignment Procedure

Mode	Adjustment	Procedure
FM	VC1	(1) Turn the radio ON. (2) Select the tuner frequency at 108 MHz. (3) Connect the test probes of frequency counter to TP11 and ground. The ground point should be as near as possible to the test point TP11. (4) Adjust VC1 to have a reading of 118.69975MHz-118.70025MHz.

c. Instrument Connection



(3) ALIGNMENT FOR AM 2ND LOCAL OSC

a. Required Instrument

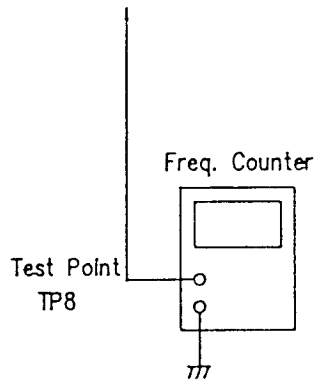
Frequency counter with higher impedance probe.

b. Alignment Procedure

Mode	Adjustment	Procedure
AM	T111	(1) Turn the radio ON. (2) Tune the frequency far away from any station to avoid interference. (3) Connect the test probes of frequency counter to TP8 and ground. (4) Adjust T111 to have a reading of 55.39485MHz-55.39515MHz.

Caution : A loading effect could emerge in the circuit if inserted with a lower impedance probe of frequency counter.

c. Instrument Connection



(4) ALIGNMENT FOR AM 2ND IF

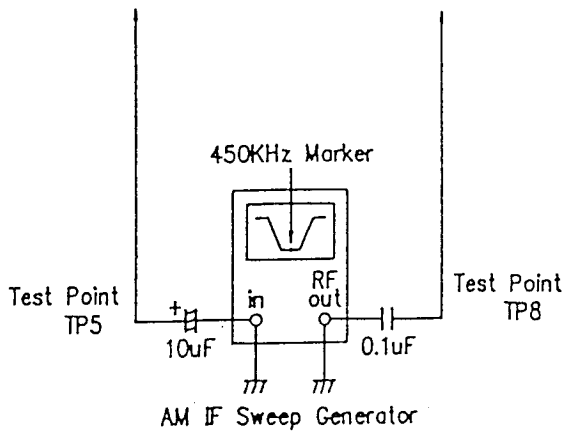
a. Required Instrument

AM IF Sweep Generator with Scope

b. Alignment Procedure

Mode	Adjustment	Procedure
AM	T104 T112	(1) Turn the radio ON. (2) Set the bandwidth switch to WIDE position. (3) Connect the input terminal of AM IF sweep generator in series with a capacitor of 10μF to the test point TP5. (4) Connect the RF output terminal of AM IF sweep generator in series with a capacitor 0.1μF to another test point TP8. (5) Adjust T104 to have a mzx. output with a marker frequency of 450kHz on the sweep scope. (6) Adjust T112 to have a max. output with a marker frequency of 450kHz on the sweep scope. (7) Repeat (5) and (6) until a max. 450kHz output is reached.

c. Instrument Connection



(5) ALIGNMENT FOR FM IF

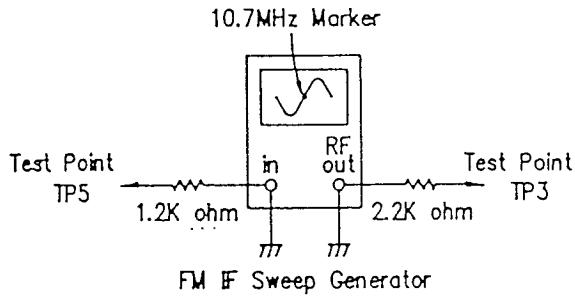
a. Required Instruments

FM IF Sweep Generator with Scope.

b. Alignment Procedure

Mode	Adjustment	Procedure
FM	T103 T105	(1) Turn the radio ON. (2) Connect the input of FM IF sweep generator in series with a resistor of 1.2K ohm to the test point TP5. (3) Connect the RF output of FM IF sweep generator in series with a resistor of 2.2K ohm to another test point TP3. (4) Adjust T103 and T105 to have a max output and best symmetrical S curve with respect to the center marker frequency of 10.7MHz.

c. Instrument Connection



(6) ALIGNMENT FOR AM SENSITIVITY

a. Required Instruments

AM Signal Generator

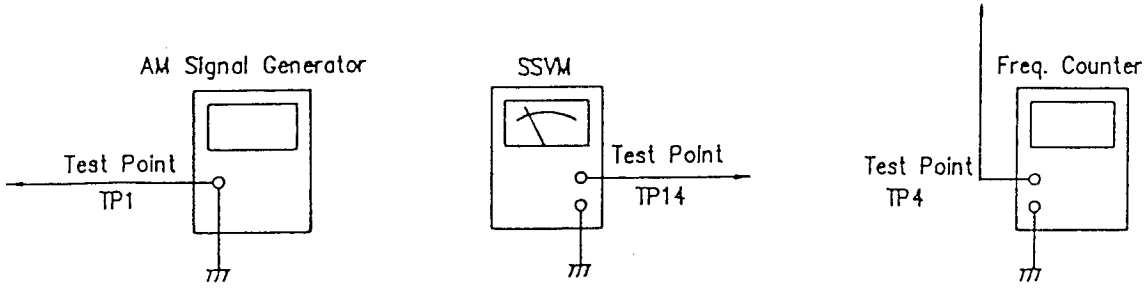
SSVM

Frequency Counter

b. Alignment Procedure

Mode	Adjustment	Procedure
AM	T108 T109 T110 T111	(1) Turn the radio ON. (2) Set the bandwidth switch to WIDE and RF GAIN VR to MAX position (3) Tune the radio band frequency to 15.100MHz. (4) Feed a signal with modulation from AM signal generator output to the test point TP1 and connect a SSVM to speaker (TP14). (5) Tune the generator frequency exactly the same as that of the radio frequency displayed. (6) Adjust T108,109,110 to have a max. audio output. (7) Connect the probe of frequency counter at the test point TP4. (8) Adjust T111 to meet the specification frequency 450kHz ± 0.15kHz. (9) Remove the counter and repeat (6) to (8) until the specification frequency is met.

c. Instrument Connection



(7) ALIGNMENT FOR FM SENSITIVITY

a. Required Instruments

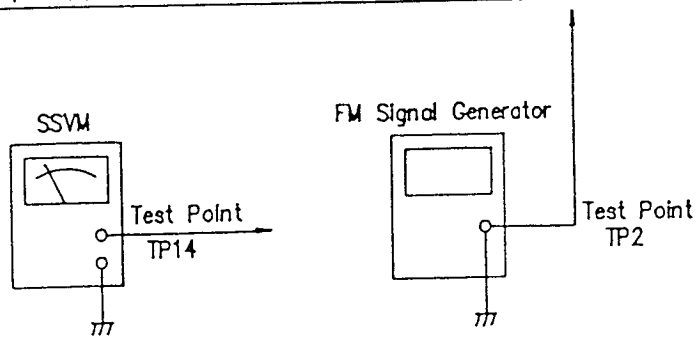
FM Signal Generator

SSVM

b. Alignment Procedure

Mode	Adjustment	Procedure
FM	T101 T102 TC101 TC102	(1) Turn the radio ON. (2) Connect a SSVM to speaker (TP14). (3) Connect a FM signal generator to the input terminal of Rod Ant. (TP2). (4) Set the signal generator to 22.5kHz deviation with 1kHz modulation. (5) Tune the radio band frequency to 90MHz and adjust T101,T102 to have a max. reading on SSVM. (6) Return the radio band frequency to 106MHz and adjust TC101,TC102 to have a max. reading on SSVM. (7) Repeat (5) and (6) until a best sensitivity on these two frequencies are formed.

c. Instrument Connection



(8) ALIGNMENT FOR MPX

a. Required Instrument

Frequency Counter

b. Alignment Procedure

Mode	Adjustment	Procedure
FM	VR102	(1) Turn the radio ON. (2) Set the FM mode switch to STEREO position. (3) Insert a plug of headphone into the HEADPHONE JACK (J3) (4) Connect the test point TP5 in series with a capacitor of 1μF to ground. (5) Connect a frequency counter to TP6. (6) Adjust VR102 to have a reading of 18.95kHz-19.05kHz on frequency counter.

c. Instrument Connection

(9) ALIGNMENT FOR INDICATION LEVEL OF BATTERY

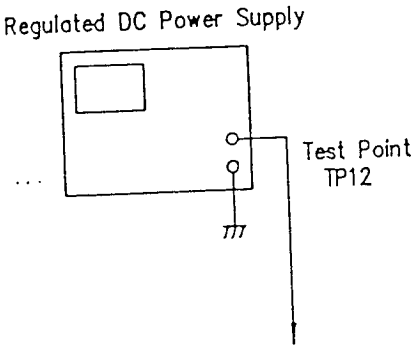
a. Required Instrument

DC Power Supply with voltage meter

b. Alignment Procedure

Adjustment	Procedure
VR105	(1) Remove batteries away from the RADIO BATTERY compartment. (2) Connect a DC power supply to the test point TP12. (3) Set the voltage to a reading of 4.4V. (4) Turn the radio ON and adjust VR105. (5) Push POWER key again to shut off the radio and the BATTERY LEVEL INDICATOR will immediately appeared on LCD for a period of 5 seconds. (6) Repeat (4) and (5) until the level was indicated on the 2nd. scale.

c. Instrument Connection



(11) ALIGNMENT FOR 450kHz TRAP

a. Required Instruments

AM Signal Generator

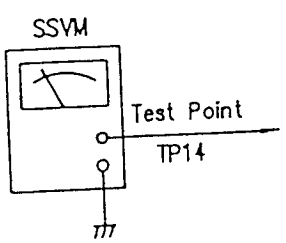
Loop Antenna

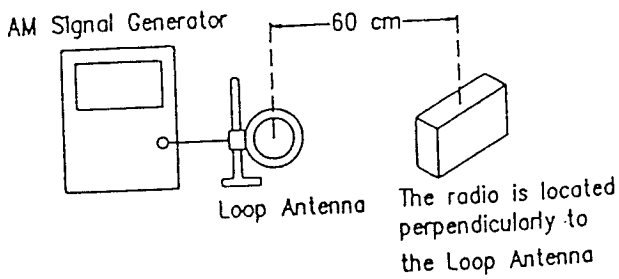
SSVM

b. Alignment Procedure

Mode	Adjustment	Procedure
AM	T115	(1) Turn the radio ON. (2) Set the bandwidth switch to WIDE and RF GAIN VR to MAX position. (3) Tune the radio band frequency to 450kHz. (4) Connect a AM aignal generator together with standard loop dummmy antenna and feed a stronger signal to the MW/LW ferrite bar antenna. (5) Tune the generator frequency to 450kHz and set modulation depth to 30%~50% (6) Connect a SSVM to speaker (TP14). (7) Adjust T115 to have a min. audio output.

c. Instrument Connection





(10) ALIGNMENT FOR SIGNAL STRENGTH LEVEL

a. Required Instrument

FM Signal Generator

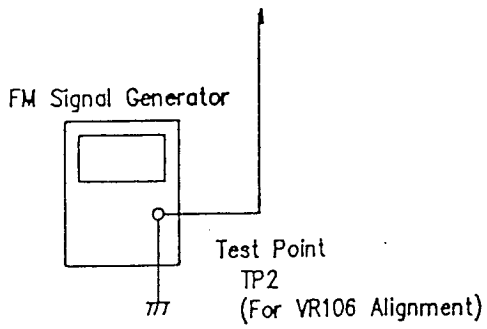
AM Signal Generator

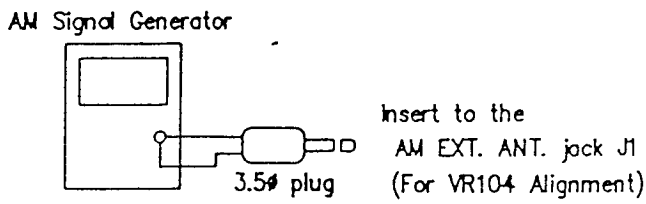
b. Alignment Procedure

Mode	Adjustment	Procedure
FM	VR106	(1) Turn the radio ON. (2) Connect a FM signal generator to the input terminal of Rod Ant. (TP2) (3) Set the signal generator to 98MHz with 1kHz Mod, 22.5Hz deviation and 36 emf dBμ/75 ohm output level. (4) Tune the radio band frequency to 98MHz and adjust VR106 to have a strength level reading of 6th scale.
AM	VR104	(1) Turn the radio ON. (2) Set the bandwidth switch to WIDE and RF GAIN VR to MAX position. (3) Tune the radio band frequency to 15.100MHz. (4) Feed a signal with 30% modulation and 36 emf dBμ/50 ohm output level into the AM EXT. ANT. Jack. (5) Tune the generator frequency exactly the same as that of the radio frequency displayed (6) Adjust VR104 to have a strength level reading of 5th scale.

Caution : Before these signal strength alignment procedures, the VR105 (for Battery level) should be in correct position.

c. Instrument Connection





(12) ALIGNMENT FOR BFO

a. Required Instrument

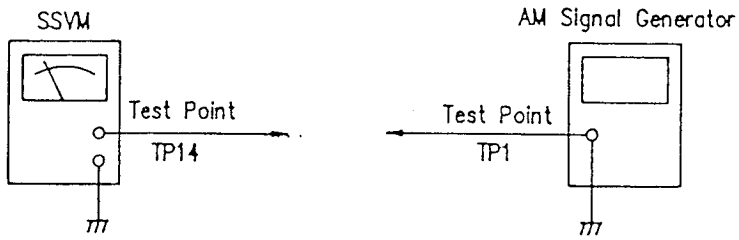
Signal Generator

SSVM

b. Alignment Procedure

Mode	Adjustment	Procedure
AM	TC103	(1) Set the power switch to ON position. (2) Set the band to SW, BFO switch to ON and BFO pitch to center position. (3) Feed a signal without modulation from signal generator to EXT ANT jack, and (connect a SSVM to the speaker. (4) Tune the radio frequency exactly the same as that of signal generator. (6) Adjust TC103 to have a minimum reading on SSVM.

c. Instrument Connection



(13) ALIGNMENT FOR FM AUTO STOP ACCURACY

a. Required Instrument

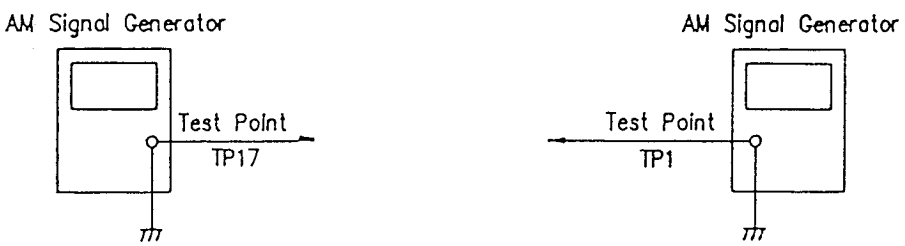
FM Signal Generator

SSVM

b. Alignment Procedure

Mode	Adjustment	Procedure
FM	VR101	(1) Set the power switch to ON. (2) Set FM 98 MHz. (3) Connect a the output of the FM signal generator to (TP1). (4) Connect SSVM to the pin 14 of IC2 (TP17). (5) Tune the band frequency to 98MHz and adjust VR101 to have a max. 1V (show on the SSVM). (6) Set FM signal generator 98.05 and 97.95 MHz to have a min. 5V (show on SSVM). (7) Repeat step 5 and 6.

c. Instrument Connection



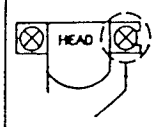
(14) ALIGNMENT FOR HEAD AZIMUTH

a. Required Instrument

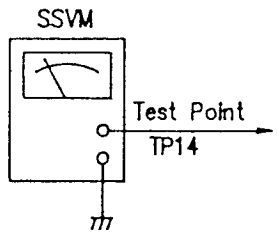
SSVM

TEST TAPE (TEAC MTT-114N or equivalent)

b. Alignment Procedure

Mode	Adjustment	Procedure
TAPE PLAY	 HEAD AZIMUTH SCREW	(1) Take OFF the cassette door (2) Load the TEST TAPE in. (3) Set TONE VR and VOL VR to max position (4) Depress the PLAY KEY (5) Ajust HEAD AZIMUTH SCREW to have a max. ON VTVM reading

c. Instrument Connection



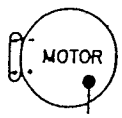
(15) ALIGNMENT FOR TAPE SPEED

a. Required Instrumet

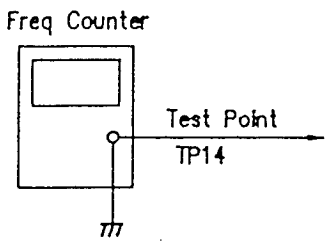
Frequency Counter

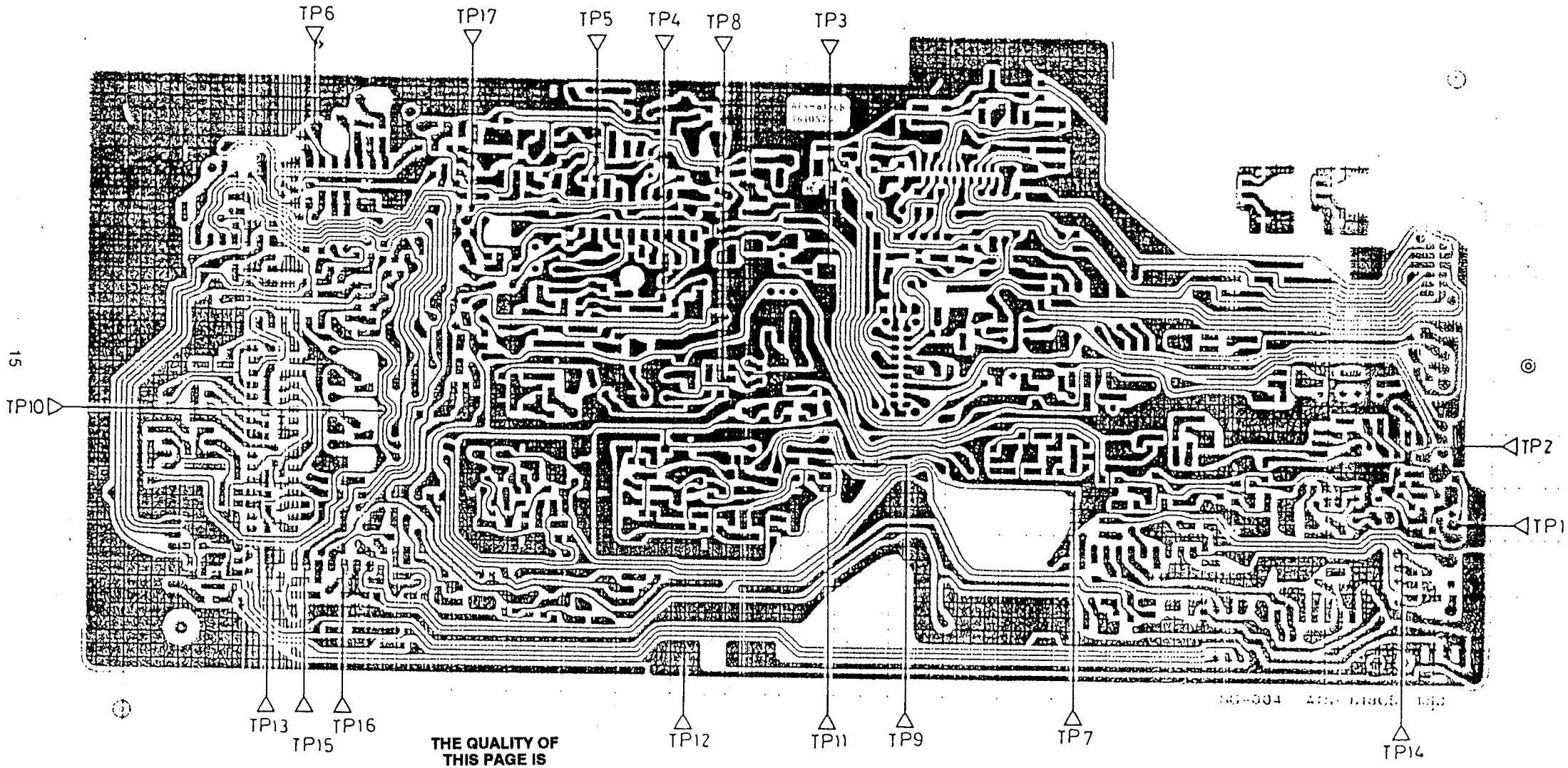
TEST TAPE (TEAC MTT-114N or equivalent)

b. Alignment Procedure

Mode	Adjustment	Procedure
TAPE PALY	 TAPE SPEED ADJ.VR	(1) Take OFF the cassette door (2) Load the TEST TAPE in. (3) Ajust TAPE SPEED ADJ. VR to have a reading of 3000Hz±3% (2910Hz-3090Hz)

c. Instrument Connection





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WIRING DIAGRAM

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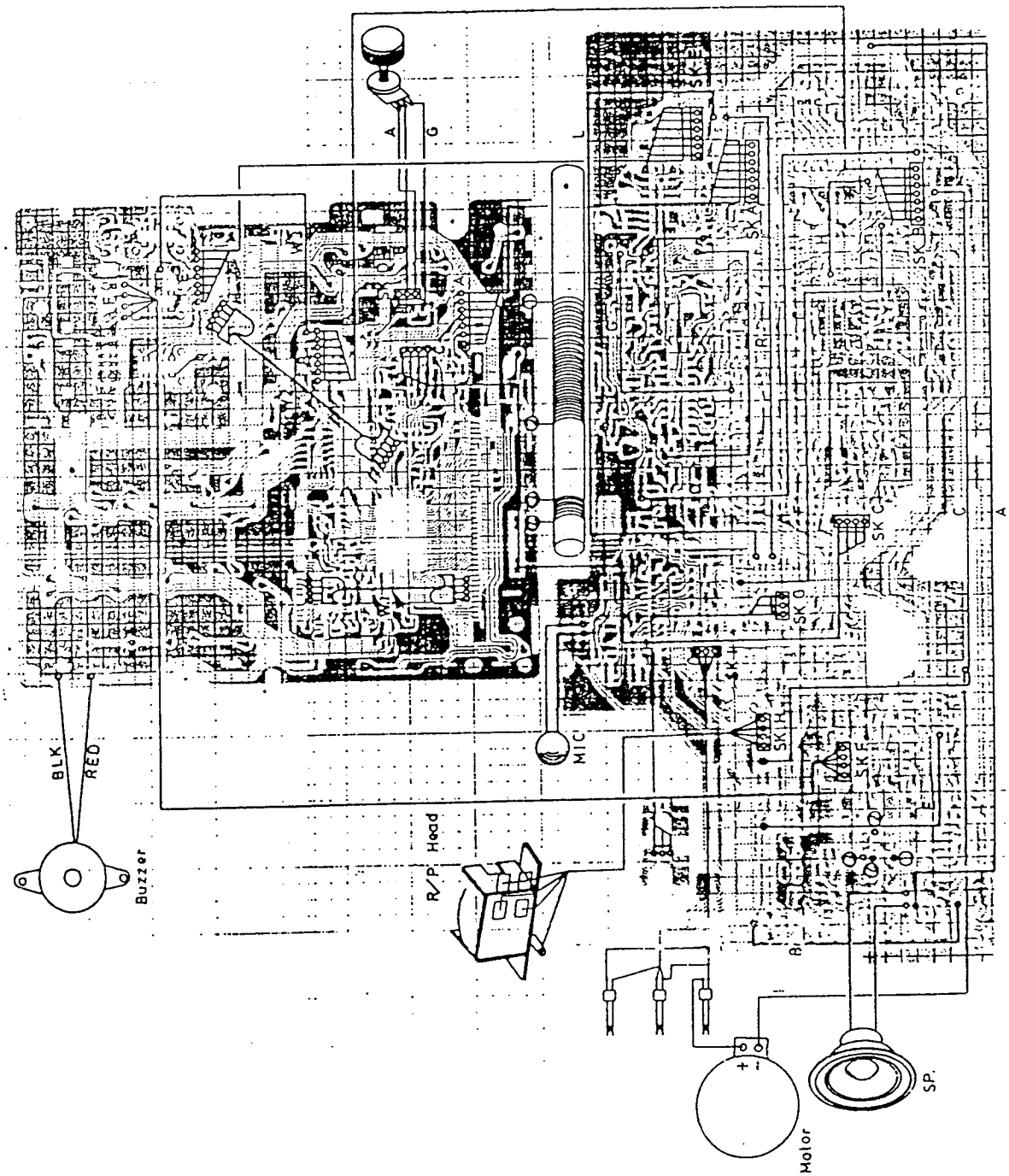
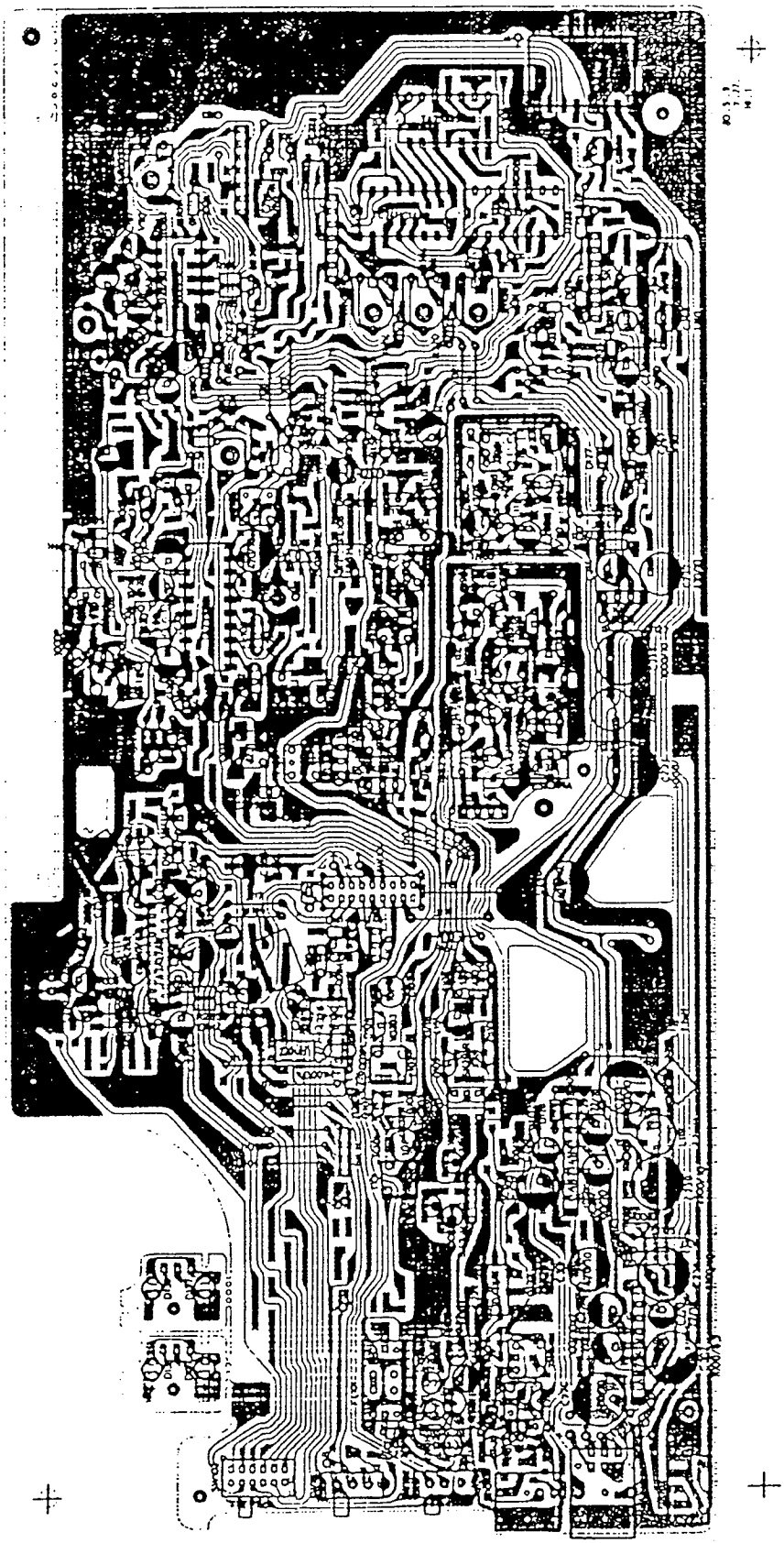


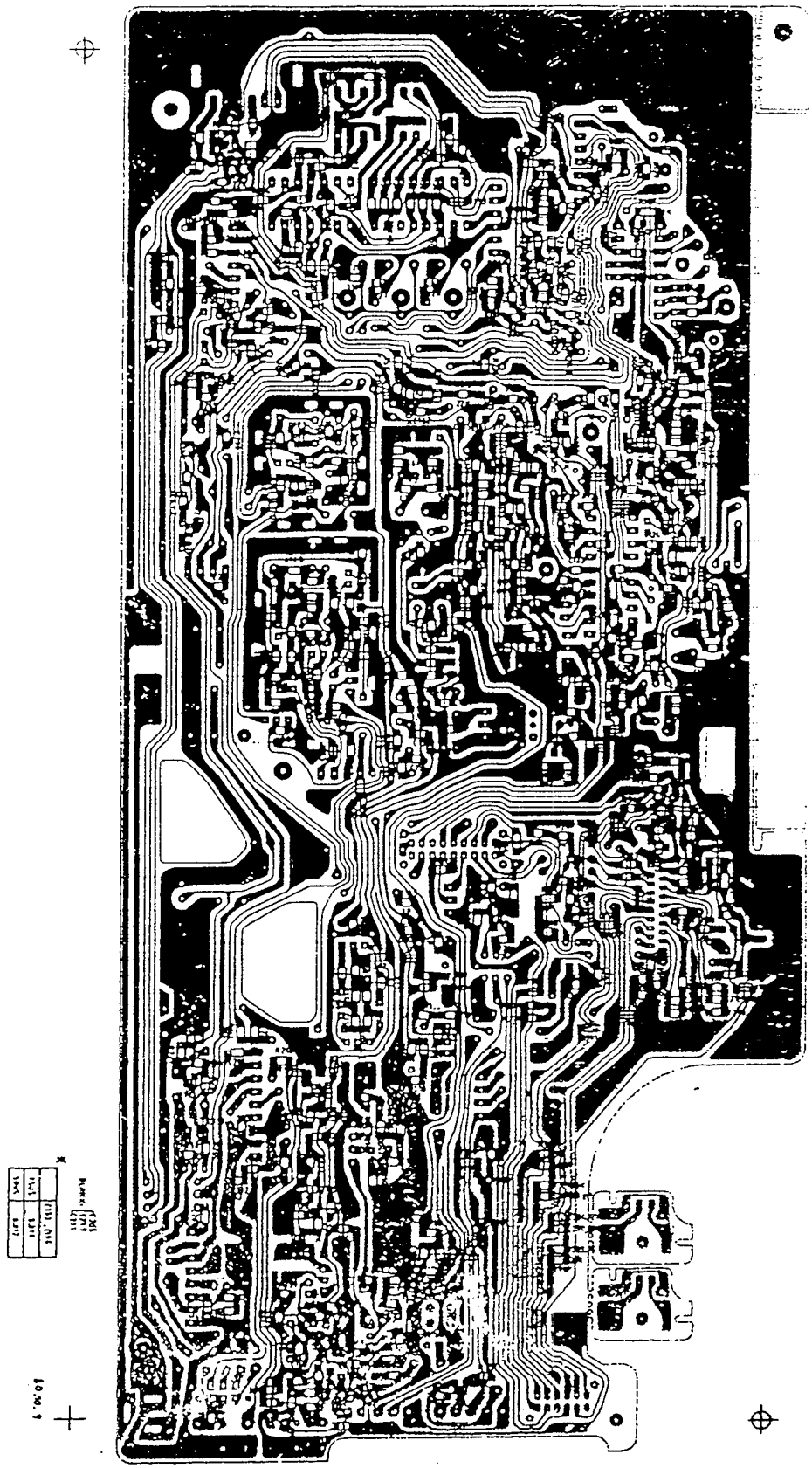
MAIN PCB TOP VIEW

THE QUALITY OF THIS PAGE IS THE BEST THAT IS AVAILABLE



TOP VIEW

MAIN PCB CHIP SIDE



CHIP VIEW PCB-A

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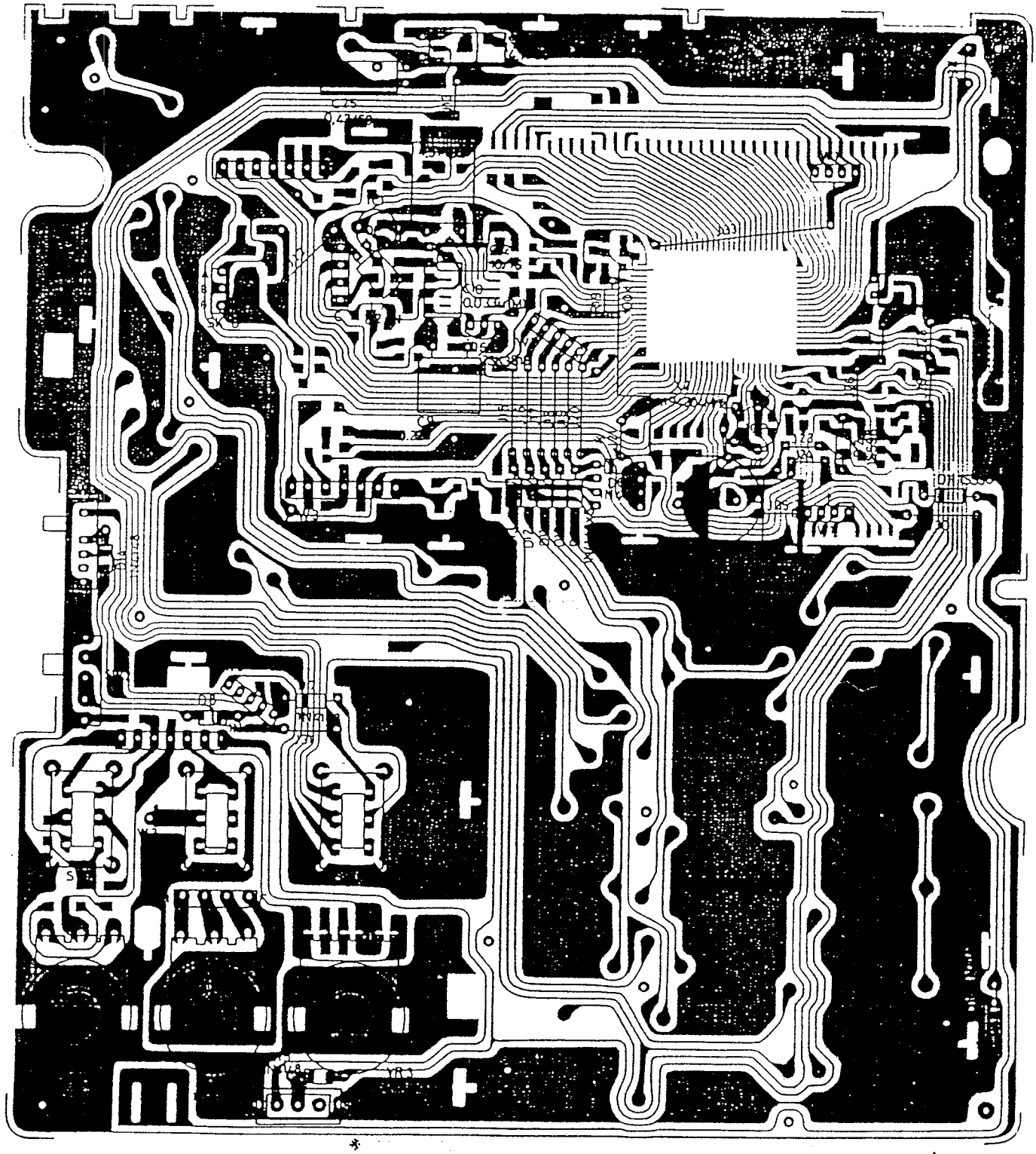
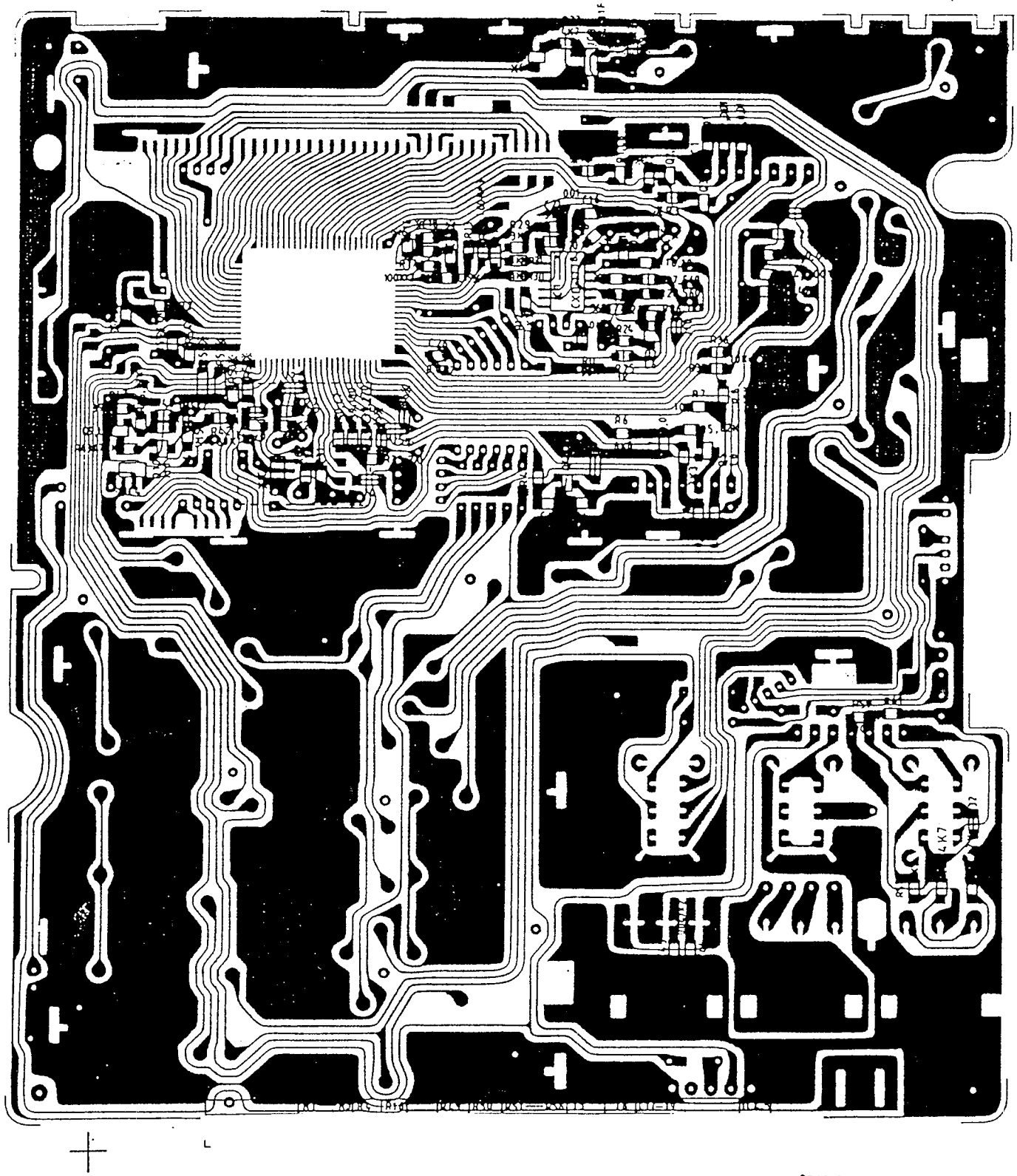
CONTROL PCB TOP VIEW

TOP-VIEW



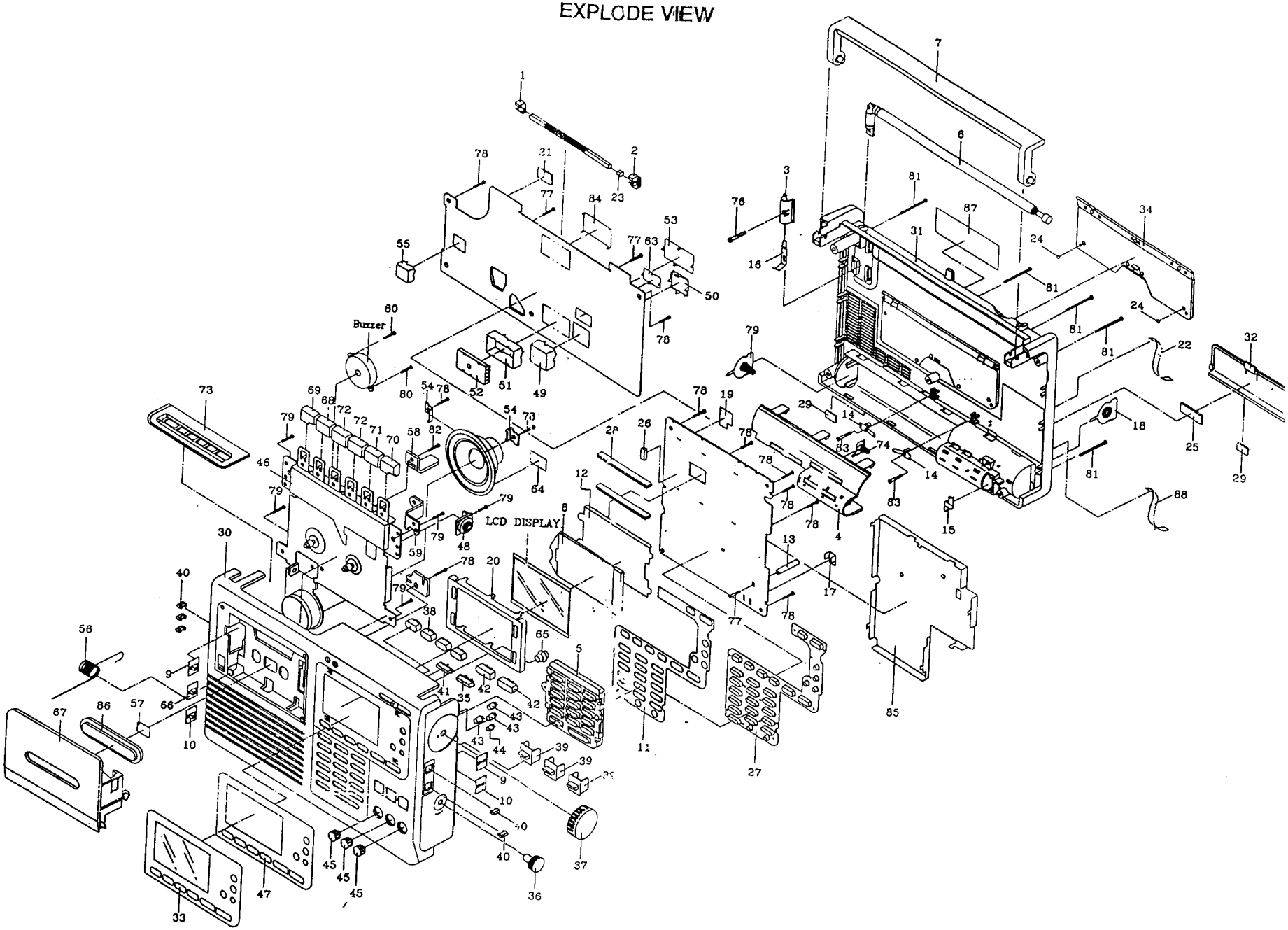
CONTROL PCB BOTTOM VIEW

BOTTOM VIEW



80.10.9

EXPLODE VIEW



MECHANICAL PARTS LIST

Ref. No.	Description	RS Part No.	Mfr. Part No.
			2018070
1	ANT. Bar Holder (L)		2018080
2	ANT. Bar Holder (R)		2018100
3	Rod ANT. Holder		2065000
4	Battery Case		
5	— Key Knob Panel Ass'y —		2065010
	Key Knob Panel		2065030
	Key Knob Holder		3156501
	Key Knob Ass'y		
	End Of Key Knob Panel Ass'y		3606502
6	Rod ANT		2065050
7	Handle		2065070
8	LCD Illuminator		3086501
9	Slide Knob Holder (B)		3076501
10	Slide Knob Holder (A)		2165000
11	Key Board Shield		2366050
12	LCD Shield Plate Ass'y		2165040
13	PCB Supporter		2165060
14	Battery Contact (FOR BACK COVER)		2165070
15	Battery Contact (+) (FOR UM – 3 BATTERY)		2165080
16	Rod ANT. Connector		2165090
17	Battery Terminal (FOR C-PCB)		2165140
18	Battery Contact (+) (FOR UM – 1 BATTERY)		2165180
19	Shield Plate (C)		2165170
20	LCD Holder (FOR C – PCB)		2256000
21	P.C.B. Hemelon (HEMELON 3.0)		2258020
22	Ribbon		2318000
23	ANT. Bat Fixed Sponge		2365010
24	EVA Cushion (FOR BACK SUPPORTER)		2365020
25	EVA Cushion (FOR BATTERY COVER)		2365040
26	Lamp EVA Spacer		2465000
27	Key Board Rubber		2465010
28	Conductive Rubber		2465030
29	Pu Foot (BATTERY COVER x 1 BACK COVER x 1)		3016501
30	Front Cabiner (W/SPEAKER GRILL & HEMELON)		3036501
31	Back Cover		3046501
32	Battery Cover		3056501
33	LCD Window		3066501
34	Back Supporter		3106501
35	Power Knob		3116501
36	Volume Knob		3126501
37	Tuning Knob (MANUAL)		3136501
38	Band Knob		3166501
39	Slide Knob (B)		3176501
40	Slide Knob (A)		3186501
41	Light Knob		3196501
42	~~Manual~~ Tuning Knob (		3206501
43	Time Set Knob (SLEEP/TIME/DUAL)		3216501
44	Dual Time Knob		3276501
45	Rotary Knob		1800030
46	Deck Mechanism		3426501
47	Dial Plate		2065110
48	Damper Gear		2149020
49	DC/DC Shield (Up)		2149030
50	DC/DC Shield (Down)		2149040
51	VOC Shield (Frame)		2149050
52	VCD Shield (Cover)		2149060
53	First OSC Shield		2149080
54	Speaker Fixer		2159010
55	DC/DC Shield (Up)		

Ref. No.	Description	RS Part No.	Mfr. Part No.
56	Cass. Open Spring		2165030
57	Al Sheet		2165050
58	Rec. Spring		2165100
59	Pcb Bracket		2165110
60	Speaker Salon Net		2265000
61	1st. Osc Shield Mylar		2349050
62	PVC Film		2365030
63	Shield Plate (B)		2165160
64	Speaker EVA Spacer		2365070
65	Mic. Holder		2465020
66	Slide Knob Holder (C)		3076502
67	Cass. Door		3096501
68	Stop/ Eject Button		3226501
69	Pause Button		3236501
70	Rec. Button		3246501
71	Play Button		3256501
72	FF/REW Button		3266501
73	Cass. Button Panel		3446501
74	Ba. Conductor Ass'y		2104050
75	Battery Contact Ass'y (–)		2165130
76	M Screw 3 x 6 P Ni (ROD ANT x 1)		9003062
77	M Screw 2.6 x 4 Pw Ni (FOR PCB SUPPORTER x 2, PCB BKT x 1)		9052042
78	TP Screw 2.6 x 8 Pw Ni (C – PCB x 6, LED PCB x 1, SPEAKER x 2, A – PCB x 2)		9152082
79	TP Screw 3 x 8 P Ni (DECK x 5, DAMPER GEAR x 1)		9103082
80	TP Screw 2 x 6 P Ni (BUZZER x 2)		9101062
81	TP Screw 2.6 x 16 P Ni Zk (BACK COVER & FRONT CABINET x 5)		9102161
82	ST Screw 2 x3 P Ni (REC. SPRING x 1)		9899003
83	TP Screw 2.6 x 8 P Ni (BATTER CONTACT x 2)		9102082
84	Shield (E) Ass'y		2218030
85	Shield Plate (A)		2165150
86	Cass, Window		2065060
87	Ribbon		3406520

ELECTRICAL PARTS LIST

Part No.	Description	Q'ty	Remark
1000020	IC uPD75308GF-177	1	IC2
1010030	IC AN7415	1	IC102
1010140	IC LA5003	1	IC103
1010300	IC TA7758P	1	IC101
1010430	IC CXD1118M-1	1	IC1
1011230	IC TC74HC148AP	1	IC108
1011350	IC AN7141N	2	IC107,109
1011370	IC S-81237AG-RE-T2	2	IC4,5
1011380	IC TA7417AP	1	IC106
1011390	IC TC4S11F	1	IC3
1011400	IC TA75339P	2	IC104,105
1020180	TR 2SC2999E	1	Q118
1020181	TR 2SC2999D	2	Q103,120
1020250	TR 2SA1020Y	1	Q143
1022000	TR 2SC2839E	4	Q107,112,113,119
1020210/1	CH TR 2SB815 B6-TA/B7	4	Q131,140,142,146
1020230/1	CH TR 2SA812 M6/M7	12	Q10,115,124-126,130,136-7,145,147 ,149,156
1020240/1	CH TR 2SC1623 L6/L7	32	Q1-5,7,9,101,104-5,114,116-7,121 127-9,134-5,138-9,141,144,148 150-1,153-5,157-9
1020241	CH TR 2SC1623 L7	3	Q106,122,123
1023010/1	CH TR 2SD1048 X6/X7	2	Q8,152
1030001	FET 2SK212E	1	Q102
1030060	FET 2SK291Q	1	Q132
1030061	FET 2SK291R	4	Q108-111
1030070	FET 2SK381A	1	Q133
1030071	FET 2SK381B	1	Q6
1042010T	DIODE 1SS238T	3	D102,107,108
1040020T	DIODE 1N4148T	30	D6-16,101,113,119-20,122-125 127-8,133-136,139,140-142
1046000T	DIODE 1SS98T	2	D1,2
1040030	DIODE 1N60	3	D105,106,117
1042030	DIODE 1S2837A5	7	D110-112,114,126,129,143
1042040	DIODE 1S2835-T2B A3	3	D130,131,132
1046010	CH DIODE RLS4148	2	D116,121
1043030	VARICAP-201SP	1	D109
1043060	VARACTOR SVC 203(AA1/AA2)	3	103,104,115
1045090	ZENER UZ-15BH	1	D118
1050020	LED RED 3mm(A)RT3-222AD	1	D137
1053010	LED GRE 3mm RT3-522PD	1	D138
1110440	BAR & COIL 0440	1	
1120950	ADJ COIL 0950	1	T106
1122211	ADJ COIL 0258-404-W038B	1	T101
1122220	ADJ COIL 0258-404-W039B	1	T102
1122231	IFT 4143-404-W188	1	T103
1122440	ADJ COIL 0258-404-W040A	1	T113
1122250	IFT 2153-404-W275	1	T105
1122260	ADJ COIL 0237-404-W402	2	T109,110
1122270	IFT 4140-404-W121	1	T112
1122280	IFT 2150-404-W387B	1	T115
1120990	ADJ COIL 0990	1	T104
1122290	ADJ COIL 4140-404-W120A	1	T114
1122300	ADJ COIL 0237-404-W322A	1	T111
1122420	ADJ COIL 0237-404-W525	1	T108
1122630	BAIS COIL 4328-404-W130	1	T117
1136100	FIXED COIL 10mH	1	T116
1150000	TOROID COIL 720uH	1	T107
1130500	FIXED COIL 0.22uHM(A)	1	L105
1130800	FIXED COIL 0.39uH15%(A)	2	L104,111

Part No.	Description	Q'ty	Remark
1130900	FIXED COIL 0.47uHM(A)	2	L108,109
1131300	FIXED COIL 1uHM(A)	1	L106
1131370	FIXED COIL 1uHM(B)	1	L103
1131500	FIXED COIL 1.5uHM(A)	1	L110
1131700	FIXED COIL 2.2uHK(A)	2	L112,115
1132400	FIXED COIL 8.2uHK(A)	3	L1,113,114
1132900	FIXED COIL 22uHK(A)	1	L101
1134100	FIXED COIL 220uHK(A)	4	L102,107,121,124
1134900	FIXED COIL 1.0mHK(A)	1	L125
1135100	FIXED COIL 1.5mHK(B)	2	L116,117
1135300	FIXED COIL 2.2mH(A)	2	L118,123
1135310	FIXED COIL 2.2mHK(B)	3	L119,120,122
1210010	TC 10PF 2222-808-23109	4	TC1,2,101,102
1210030	TC 100PF	1	TC103
1310020	R-VR 50KAx2	1	VR3
1310050	R-VR 100KB(A)	1	VR2
1310060	R-VR 1KRD	1	VR1
1310130	VR VOLUME 50KAx2(C)	1	VR107
1320160	SVR 10KB(E)	4	VR102,104-106
1320150	SVR 100KB(D)	1	VR101
1600120	LCD-ATS-818	1	
1610550	PCB CONTROL	1	
1620230	SPEAKER 3"4 Ω 1W	1	
1625010	PIEZO BUZZER 20235(180)	1	
1810010	CONDENSER MICRO PHONE(C)	1	
1630010	SWITCH 1P2C(A)	1	SW4
1630340	SWITCH 1P2C(H)	1	SW2
1630620	SWITCH 1P3C	1	SW3 SW1 RADIO BW2 SW4 SSB ON/OFF SW5 AM WIDE
1630600	SWITCH 2P2C	3	SW1,5,6
1630190	SWITCH 1P2C(E)	2	SW101,102
1630610	SWITCH 4P2C	1	SW103
1630590	SWITCH 6P2C	1	SW104
1640060	JACK HSJ 0914-01-040	1	JK103
1647000	JACK HEC 0470-01-230	1	JK102
1649021	JACK HSJ 0912-01-022	1	JK101
1650020	X'TAL 55.405MHz	1	X101
1650031	X'TAL 4.5MHz	1	X1
1650071	X'TAL 4.194304MHz	1	X2
1650061	RESNATOR-451kHz	1	CR101
1650041	X'TAL 55.845MHz	2	FL104,105
1122200	LC FILTER 0247-036	1	FL101
1660080	FILTER SFE10.7MA8-A	2	FL102,103
1660170	FILTER SFP 450I	1	FL106
1660360	FILTER SFR 450J	1	FL107
1610570	PCBOARD-MAIN	1	
1680030	LAMP 3.2 φ x13mm	1	
1700100	CNT HOUSING EHR-3	2	SK D,SK I
1702050	CNT HOUSING-R1-H	3	SK C,SK F, SK H
1702070	CNT HOUSING 3P	1	SK G
1702080	CNT HOUSING 7P	3	SK A,SK B,SK E
1703140	CNT CABLE ASS'Y-4P-A	1	C
1703150	CNT WIRE ASS'Y 3P-A	1	ROD ENCODER
1703170	CNT WIRE ASS'Y-3P-B	1	I DECK
1703180	CNT CABLE ASS'Y 4P-B	1	H DECK
1703190	CNT WIRE ASS'Y 4P-C	1	F
1730020	ROT ENCORD	1	
4447461S	EL 474M 50V 5x11(2)-S	1	C25
4447562S	EL 475M 50V 5x11(2)-S	2	C46,47
4410632S	EL 106M 16V 5x11(2)-S	1	C12
4410722S	EL 107M 10V 6.3x11.2(2.5)-S	1	C29

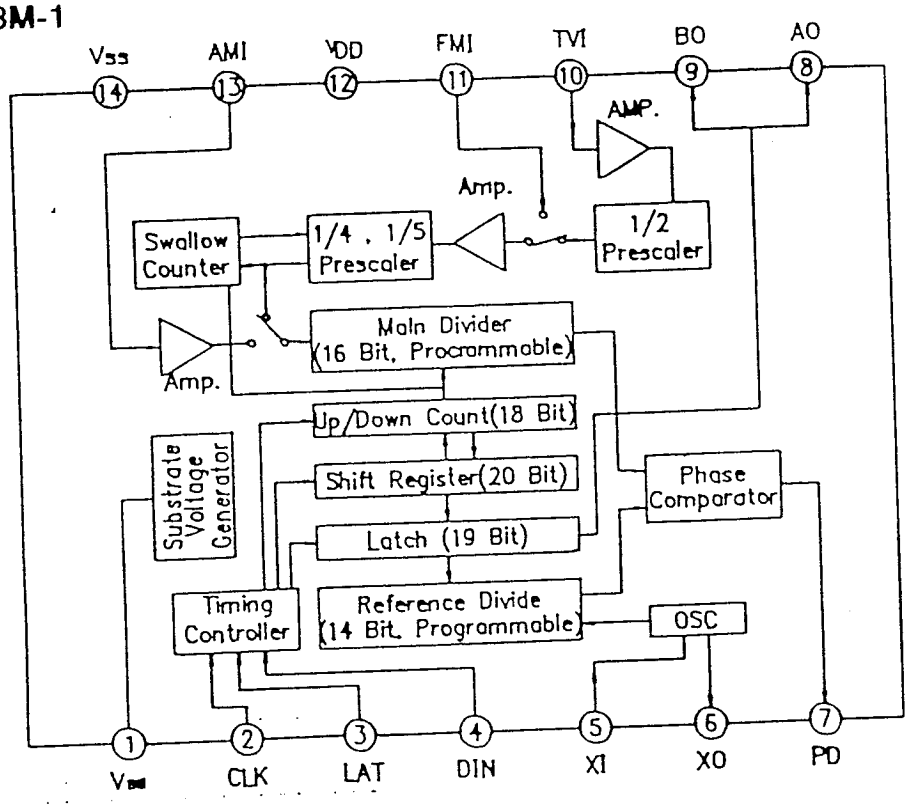
Part No.	Description	Q'ty	Remark
4422460	EL 224M 50V 5x11	1	C182
4447461	EL 474M 50V 5x11(2)	1	C184
4410561	EL 105M 50V 5x11	10	C125,128,180,185,187,203,224,232,267,268
4410560	EL 105M 50V 4x7(1.5)	2	C255,264
4447540	EL 475M 25V 4x7(1.5)	3	C204,256,261
4410631	EL 106M 16V 4x7(1.5)	3	C142,222,250
4410632	EL 106M 16V 5x11(2)	8	C122,129,151,164,169,193,207,294
4422630	EL 226M 16V 5x11(2)	2	C270,296
4422621	EL 226M 10V 4x7(1.5)	2	C253,283
4447610	EL 476M 6.3V 5x7(2)	3	C259,285,290
4447620	EL 476M 10V 5x11	4	C177,199,236,241
4410722	EL 107M 10V 6.3x11.2(2.5)	6	C117,240,271,272,297,298
4422711	EL 227M 6.3V 6x8	1	C258
4433710	EL 337M 6.3V 6.3x11	5	C120,181,214,218,228
4447721	EL 477M 10V 8x11.5	6	C127,237,274,278,301,305
4410810	EL 108M 6.3V 10x12.5(5)	1	C302
4410820	EL 108M 10V 10x16(5)	3	C233,234,238
4422821	EL 228M 10V 10x20(5)	4	C235,239,246,252
4110476	CC 104M 16V UZE08	1	C247
4504710	PS 471J 50V 4.8x12(2.5)	1	C179
4501020	PS 102J 50V 5x12(2.5)	1	C139
4610280	MY 102J 100V	1	C276
4610380	MY 103J 100V	2	C279,280
4633360	MY 333J 50V	1	C10
4656260	MY 562J 50V	1	C133
4710380	PL 103J 100V	1	C277
4822460	MP/C 224J 50V 7.5x8.5(5)	1	C9 t<4.5mm
4947300	SUP.C. 473Z 5.5V 7x12	1	C30
4001001	CH CC 010C 50V NPO-A	4	C115,159,307,309
4002001	CH CC 020C 50V NPO-A	3	C148,192,201
4005001	CH CC 050C 50V NPO-A	4	C28,113,145,211
4006002	CH CC 060D 50V NPO-A	2	C156,158
4008002	CH CC 080D 50V NPO-A	1	C196
4010002	CH CC 100D 50V NPO-A	3	C106,225,229
4015001	CH CC 150J 50V NPO-A	1	C15
4022016	CH CC 220J 50V UJ-A	1	C27
4022001	CH CC 220J 50V NPO-A	1	C107
4033001	CH CC 330J 50V NPO-A	1	C134
4039001	CH CC 390J 50V NPO-A	3	C14,16,21
4047001	CH CC 470J 50V NPO-A	1	C173
4047016	CH CC 470J 50V UJ-A	2	C140,165
4056016	CH CC 560J 50V UJ-A	2	C163,166
4068001	CH CC 680J 50V NPO-A	3	C102,126,146
4010101	CH CC 101J 50V NPO-A	8	C101,144,206,243-5,263,281
4010128	CH CC 101J 50V NPO-B	1	C308
4022101	CH CC 221J 50V NPO-A	6	C104,114,131,198,226,230
4033101	CH CC 331J 50V NPO-A	1	C209
4039101	CH CC 391J 50V NPO-A	1	C212
4068119	CH CC 681J 50V SL-A	3	C105,286,288
4018261	CH CC 182K 50V X7R-A	2	C287,289
4022261	CH CC 222K 50V X7R-A	3	C138,254,262
4047267	CH CC 472K 50V X7R-A	4	C147,149,150,194
4012367	CH CC 123K 25V X7R-A	2	C183,186
4039367	CH CC 393K 25V X7R-A	2	C284,291
4047361	CH CC 473K 50V X7R-A	2	C44,45
4010262	CH CC 102M 50V X7R-A	7	C23,24,124,162,189,217,306
4010368	CH CC 103M 25V X7R-A	50	C1-5,7,20,103,108-112,116,121,130,132 135-7,141,143,152-3,155,157,160-1,167-8 170-2,175-6,178,188,190-1,197,200,210 215-6,213,223,242,265,275,293

Part No.	Description	Q'ty	Remark
4022285	CH CC 222M 50V X7R-B	2	C257,260
4022368	CH CC 223M 25V X7R-A	7	C118,119,123,174,195,202,221
4047371	CH CC 473Z 25V Y5V-A	11	C6,8,11,13,26,205,208,220,273,299,303
4010471	CH CC 104Z 25V Y5V-A	5	C31,248,249,300,304
4022494	CH CC 224Z 25V Y5V-B	8	C227,231,251,266,269,282,292,295
6050756T	RD 1/6W 47KJ-T	2	R101(SM10),288(SM15)
6020444	RD 1/4W 4.7KJ SM10	1	R308
6050712T	RD 1/6W 10J-T (SM10)	1	R154
6050724T	RD 1/6W 100J-T (SM7.5)	1	R190
6050731T	RD 1/6W 390J-T (SM10)	1	R188
6050732T	RD 1/6W 470J-T (SM5)	1	R264
6050740T	RD 1/6W 2.2KJ-T (SM5)	1	R166
6050744T	RD 1/6W 4.7KJ-T (SM7.5)	2	R185,186
6050748T	RD 1/6W 10KJ-T (SM10)	3	R285,286,309
6050760T	RD 1/6W 100KJ-T (SM5)	2	R158,178
6050760T	RD 1/6W 100KJ-T (SM7.5)	1	R191
6050760T	RD 1/6W 100KJ-T (SM10)	1	R192
6010522	RD 1/8W 68J-T SM5	1	R306
6010352	RD 1/8W 22KJ-T SM7.5	1	R207
6010553	RD 1/8W 27KJ-T SM5	1	R210,214
6010560	RD 1/8W 100KJ-T SM5	1	R19
6160106	CH RD 1/10W 3.3J-A	3	R290,319,332
6160112	CH RD 1/10W 10J-A	2	R10,261
6160116	CH RD 1/10W 22J-A	6	R111,120,140,145,168,291
6160118	CH RD 1/10W 33J-A	1	R104
6160120	CH RD 1/10W 47J-A	1	R40
6160121	CH RD 1/10W 56J-A	1	R107
6160122	CH RD 1/10W 68J-A	2	R161,300
6160123	CH RD 1/10W 82J-A	3	R150,151,227
6160124	CH RD 1/10W 100J-A	8	R39,128,131,157,228,230,333-4
6160125	CH RD 1/10W 120J-A	2	R62,146
6160126	CH RD 1/10W 150J-A	3	R112,226,278
6160128	CH RD 1/10W 220J-A	4	R38,144,198,279
6160129	CH RD 1/10W 270J-A	2	R35,225
6160130	CH RD 1/10W 330J-A	9	R105,122,143,173,237,271-3,320
6160131	CH RD 1/10W 390J-A	1	R142
6060132	CH RD 1/10W 470J-A	1	R235
6160133	CH RD 1/10W 560J-A	5	R20,23,27,117,118
6160134	CH RD 1/10W 680J-A	2	R231,247
6160136	CH RD 1/10W 1KJ-A	22	R25,28,30-1,103,116,126,174,184,187 195-197,232,238,251,254-5
6160137	CH RD 1/10W 1.2KJ-A	1	R58
6060138	CH RD 1/10W 1.5KJ-A	2	R124,200
6160139	CH RD 1/10W 1.8KJ-A	5	R26,108,223,242,246
6160140	CH RD 1/10W 2.2KJ-A	8	R24,138,156,170,177,297,337-8
6160141	CH RD 1/10W 2.7KJ-A	3	R160,274,294
6160142	CH RD 1/10W 3,3KJ-A	10	R9,148-9,167,169,193,287,299,305,312
6160143	CH RD 1/10W 3.9KJ-A	4	R29,106,123,155
6160144	CH RD 1/10W 4.7KJ-A	8	R12,33,57,119,137,179,244,296
6160145	CH RD 1/10W 5.6KJ-A	1	R165
6160146	CH RD 1/10W 6.8KJ-A	8	R6,130,135-6,175,289,316,329
6160147	CH RD 1/10W 8.2KJ-A	3	R114,163,164
6160148	CH RD 1/10W 10KJ-A	10	R7,36-7,222-3,266,281,295,310,333
6160149	CH RD 1/10W 12KJ-A	2	R302,304
6160150	CH RD 1/10W 15KJ-A	3	R219,301,303
6160151	CH RD 1/10W 18KJ-A	1	R209
6160152	CH RD 1/10W 22KJ-A	15	R162,183,202,213,229,239,257,260,262-3 292,313,315,317-8
6160153	CH RD 1/10W 27KJ-A	2	R171,180
6160154	CH RD 1/10W 33KJ-A	5	R16,46,134,153,201

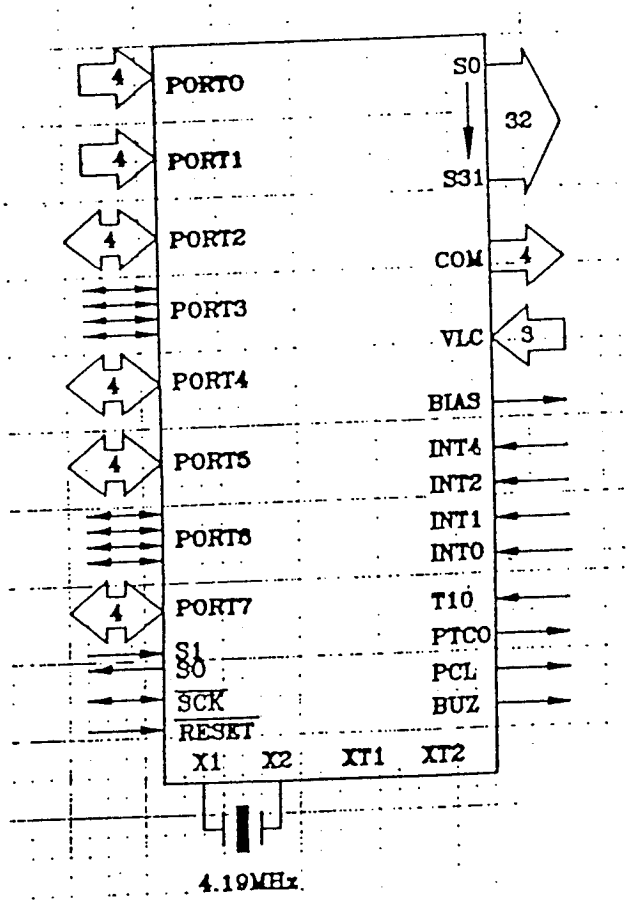
Part No.	Description	Q'ty	Remark
6160155	CH RD 1/10W 39KJ-A	5	R47,125,204,240,241
6160156	CH RD 1/10W 47KJ-A	8	R8,21,22,60,109,121,258,270
6160157	CH RD 1/10W 56KJ-A	1	R11
6160158	CH RD 1/10W 68KJ-A	4	R133,159,203,236
6160159	CH RD 1/10W 82KJ-A	5	R5,102,194,298,307
6160160	CH RD 1/10W 100KJ-A	22	R4,13,15,17,18,59,110,113,129,141,181-2 199,204,206,252,267,269,293,314,326,339
6160161	CH RD 1/10W 120KJ-A	2	R49,218
6160162	CH RD 1/10W 150KJ-A	7	R32,51,54-56,61,234
6160164	CH RD 1/10W 220KJ-A	6	R50,208,211,215,217,265
6160165	CH RD 1/10W 270KJ-A	2	R127,139
6160166	CH RD 1/10W 330KJ-A	8	R115,147,221,250,253,256,268,335
6160167	CH RD 1/10W 390KJ-A	1	R220
6160168	CH RD 1/10W 470KJ-A	14	R1-3,43,212,216,259,284,321,322-5,327
6160170	CH RD 1/10W 680KJ-A	1	R42
6160173	CH RD 1/10W 1.2MJ-A	5	R132,172,243,248,280
6160174	CH RD 1/10W 1.5MJ-A	4	R41,44,45,276
6160178	CH RD 1/10W 3.3MJ-A	1	R34
6160194	CH JUMP 0J-A	28	J1-3,5,6,8,10,11,32,150,154-9,162-5,167 169,171-6
6110194	CH JUMP 0J-A	9	J4,32,152-3,160-1,166,168,170
6110124	CH RD 1/8W 100J-B	1	R176
6110136	CH RD 1/8W 1KJ-B	1	R224
6110140	CH RD 1/8W 2.2KJ-B	1	R152
6110144	CH RD 1/8W 4.7KJ-B	1	R245
6110148	CH RD 1/8W 10KJ-B	4	R189,282,283,311
6110152	CH RD 1/8W 22KJ-B	1	R249
6110156	CH RD 1/8W 47KJ-B	1	R275
6110160	CH RD 1/8W 100KJ-B	1	R14
6110162	CH RD 1/8W 150KJ-B	2	R52,53
8834048	W/3 220(6+6) P=2.54 GRY	1	G
8725350	W/4 70(6+6) P=2.0 GRY	1	W1
8650010	W/5 90(6+6) P=2.0 GRY	1	W2
8872848	W/6 160(6+6) P=2.54 GRY	2	B,E
8874149	W/7 230(6+6) P=2.54 WHT	1	A
8000010	W/JUMP 5(10) 0.6mm	14	J13,23-29,34,101,112,114,121,136
8000030	W/JUMP 7.5(10) 0.6mm	10	J31,108-9,123,125,129,131,134-5,137
8000040	W/JUMP 10(10) 0.6mm	19	J12,22,30,103-7,110,113,116-7,120,122 124,126,128,132-3
8000050	W/JUMP 12.5(10) 0.6mm	6	J15-20
8000061	W/JUMP 20(10) 0.6mm	1	J111
8000090	W/JUMP 15(10) 0.6mm	4	J118,119,127,130
8000160	W/JUMP 26(10) 0.6mm	1	J33
8170412	W/PVC 40(3+3) RED	2	DECK SW -
8170866	W/PVC 60(9+9) BLU	2	W H, W J
8171262	W/PVC 80(9+9) RED	1	W3
8171365	W/PVC 85(9+9) GRN	2	W B, W G
8171869	W/PVC 110(9+9) WHT	2	6V BATT(−)
8171662	W/PVC 100(9+9) RED	2	W E,I
8172662	W/PVC 150(9+9) RED	1	6.0V BATT(+)
8173012	W/PVC 170(3+3) RED	1	MOMTOR(+)
8173040	W/PVC 170(6+6) BLK	1	6.0V BATT(−)
8193351	W/PVC 185(6+9) BRN	1	W D
8173443	W/PVC 190(6+6) ORG	1	W F
8173610	W/PVC 200(3+3) BLK	1	MOMTOTR(−)
8173041	W/PVC 300(6+6) BRN	1	W A
8591700	W/PVC/2 180(6+6) RED/BRN	2	SP+,− W L,R
8601610	W/SHIELD 220(3+6)	1	MIC
8601620	W/SHIELD 260(6+6)	1	W C

IC CIRCUIT BLOCK DIAGRAM

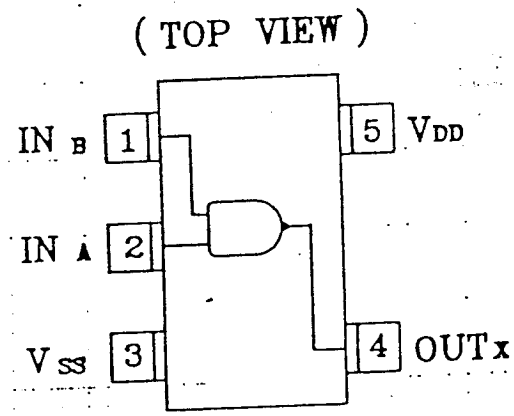
(1) IC1-CXD1118M-1



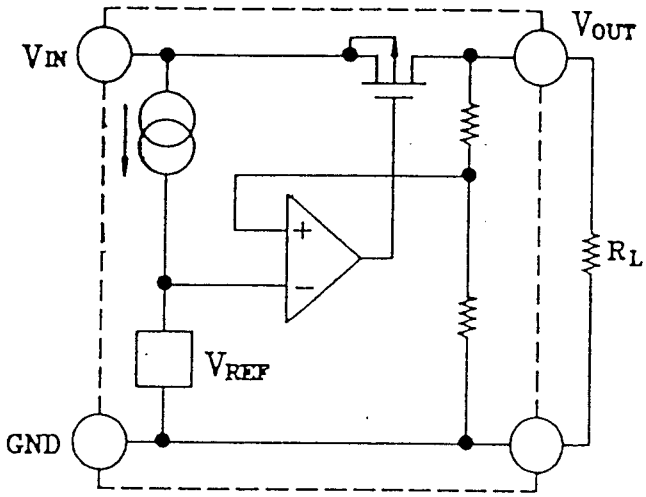
(2) IC2-UPD 75308GF-117



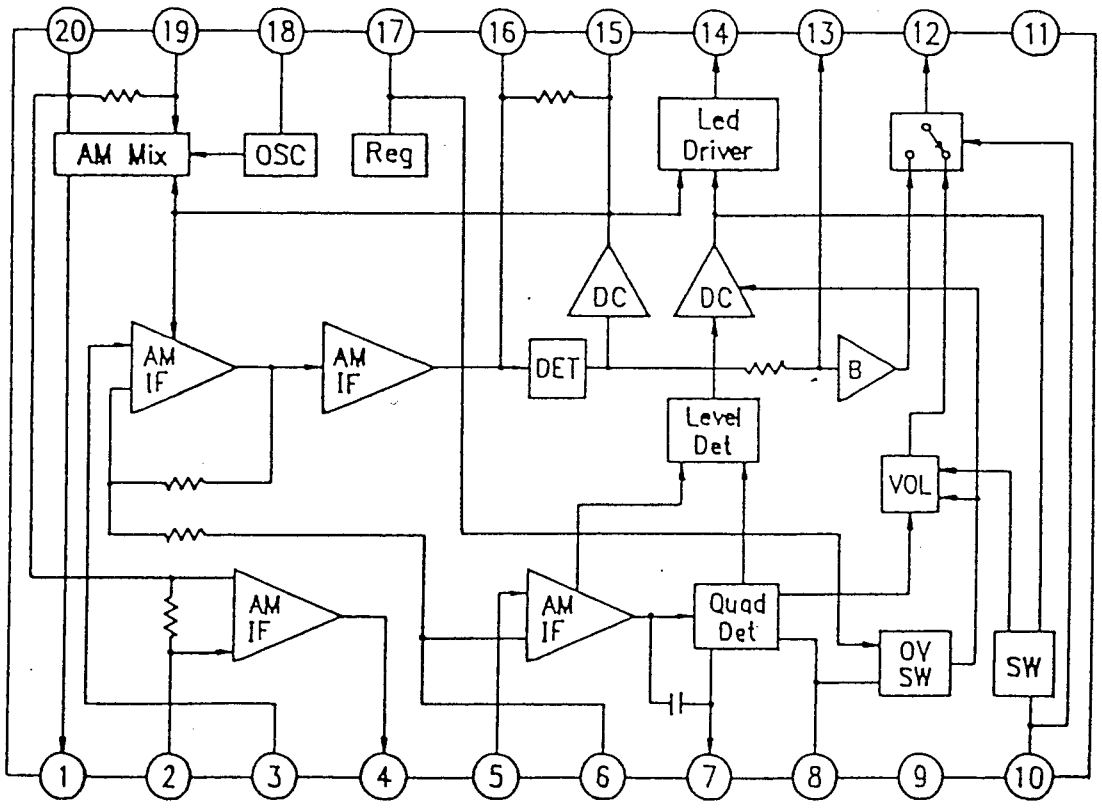
(3) IC3-TC4S11F



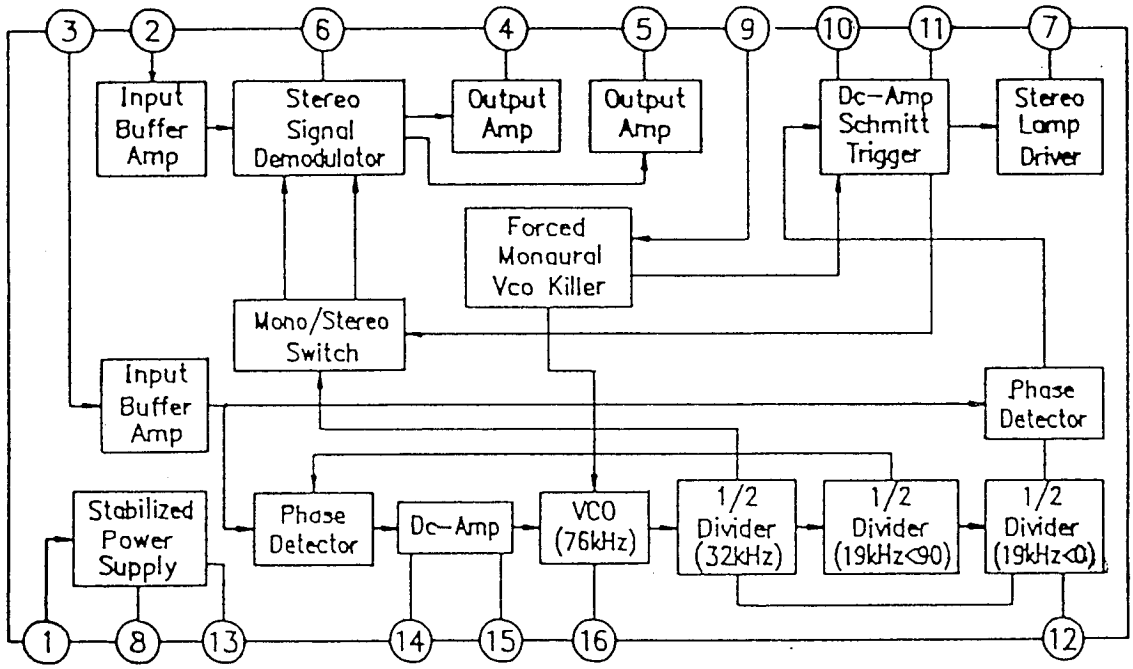
(4) IC4, 5-S-81230AG-RE-T2



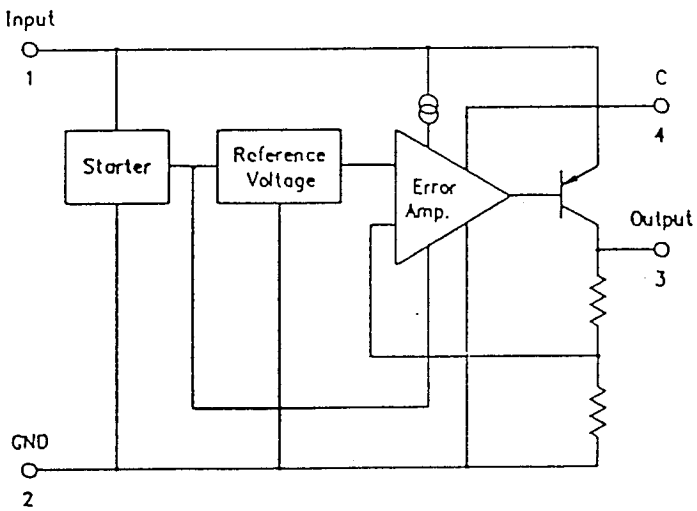
(5) IC101-TA7758P



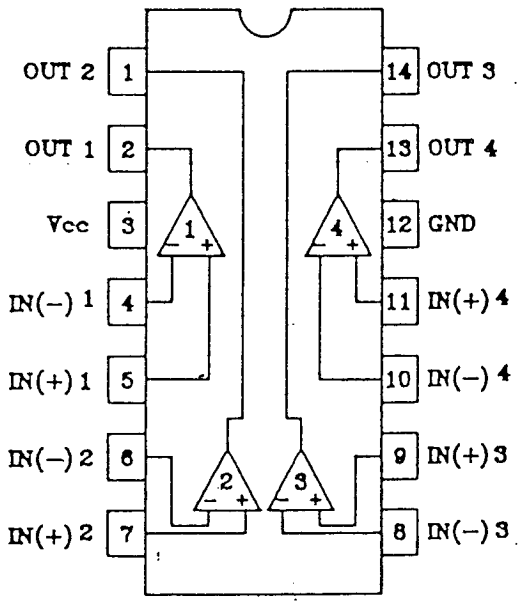
(6) IC102-AN7415



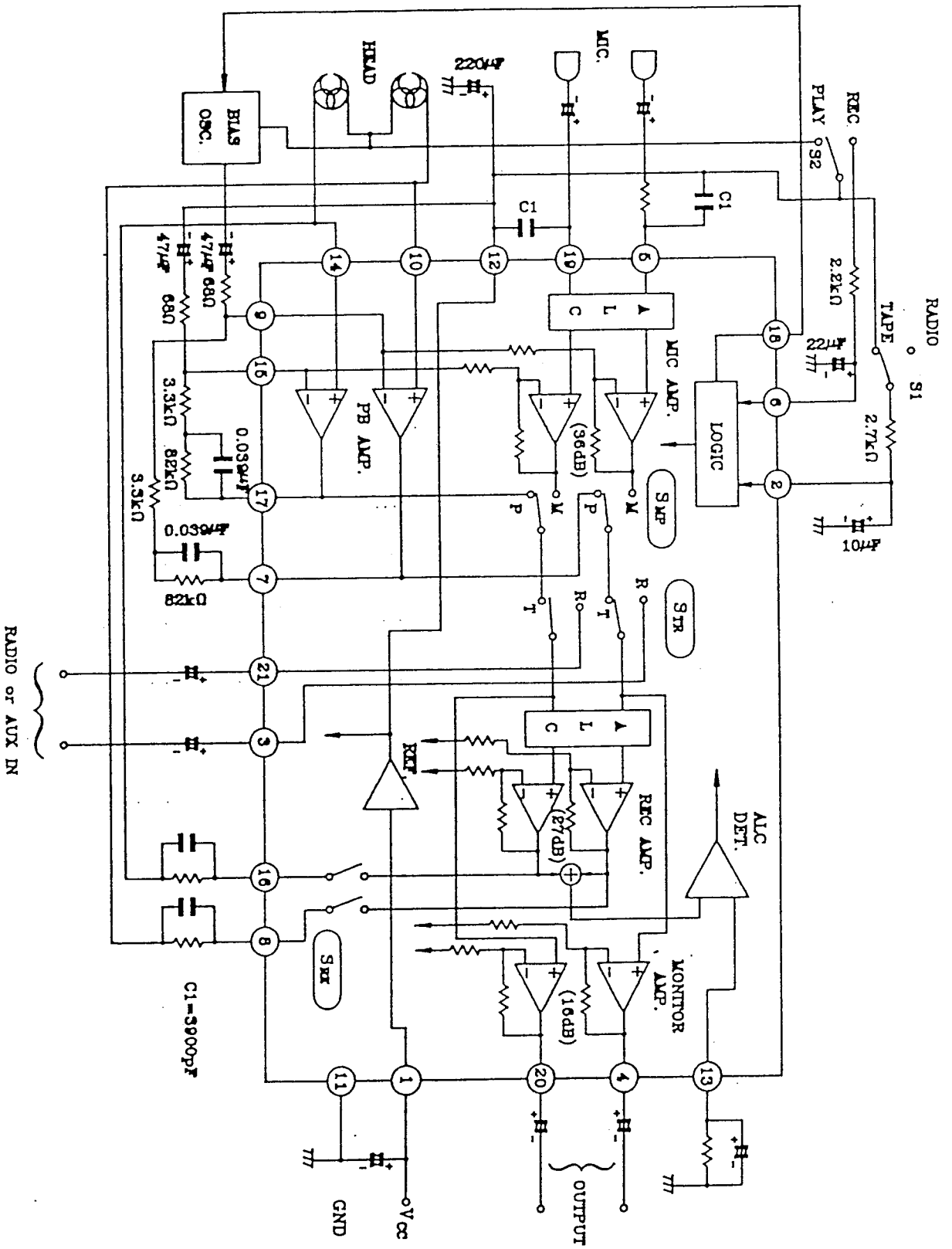
(7) IC103-LA5003



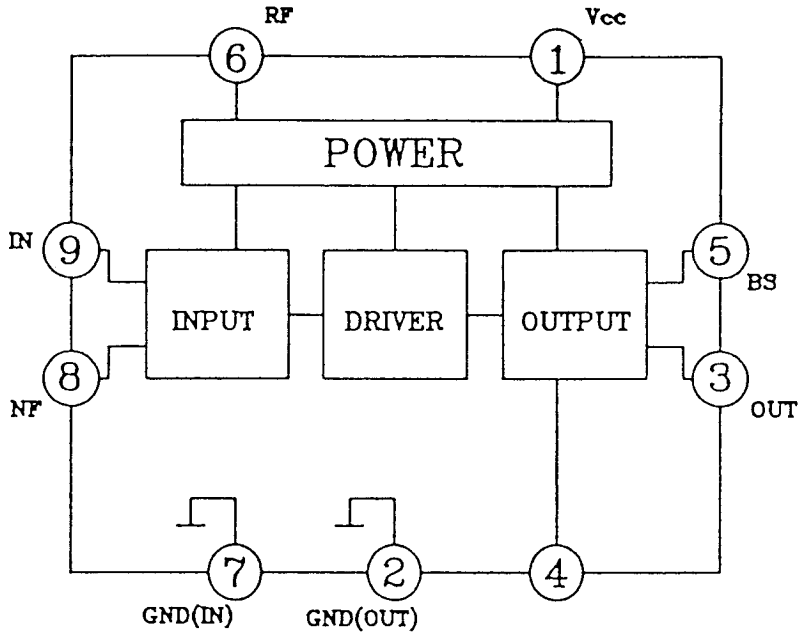
(8) IC104, 105-TA75339P



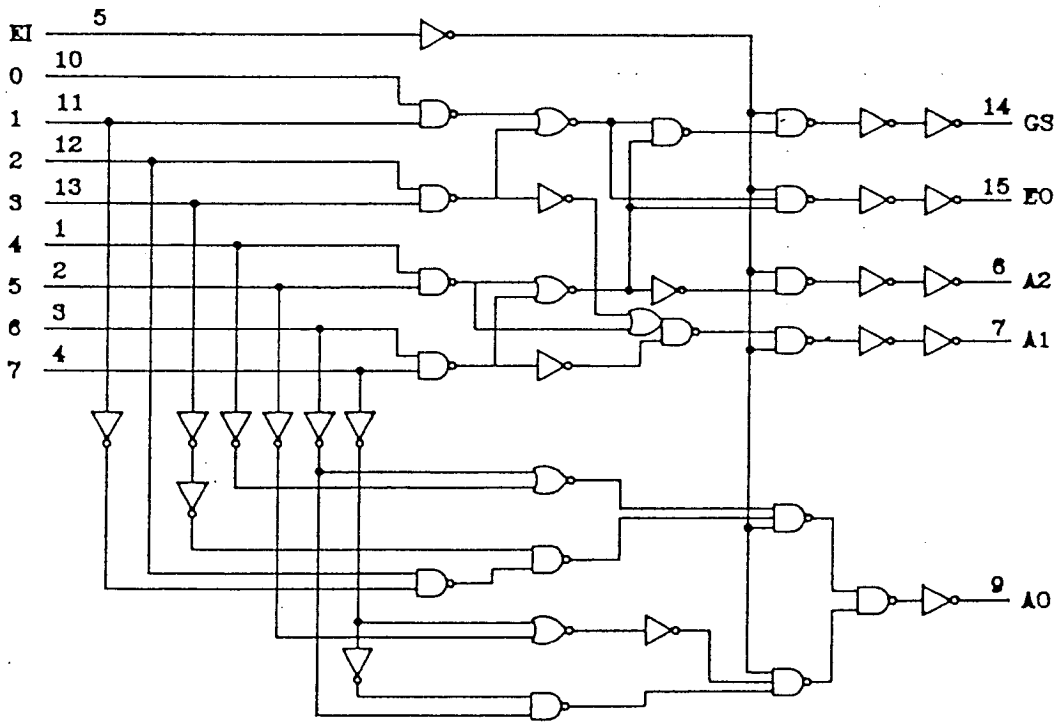
(9) IC106-TA7417AP



(10) IC107, 109-AN7141N



(11) IC108-TC74HC148AP



ICS' & TRANSISTORS' VOLTAGE LIST

IC101

PIN NO.	FM	AM
1	4.39	3.80
2	1.66	1.66
3	1.83	1.60
4	1.27	1.79
5	1.38	1.60
6	1.38	1.60
7	5.35	5.30
8	2.60	2.25
9	5.35	5.30
10	5.05	0
11	0	0
12	1.50	1.59
13	0	2.35
14	2.97	2.97
15	1.12	1.08
16	1.12	1.08
17	2.38	2.33
18	1.77	1.46
19	1.66	1.66
20	1.66	1.66

IC102

PIN NO.	FM	AM
1	2.86	2.86
2	0.46	0.46
3	0.46	0.46
4	0.93	0.93
5	0.93	0.93
6	0.02	0.02
7	2.99	2.99
8	0	0
9	1.04	1.04
10	0.45	0.45
11	1.17	1.17
12	1.32	1.32
13	1.43	1.43
14	1.15	1.15
15	1.15	1.15
16	0.02	0.02

IC104

PIN NO.	FM	AM
1	3.00	3.00
2	3.00	3.00
3	3.00	3.00
4	0.75	0.70
5	1.11	0.94
6	0.75	0.70
7	1.19	1.00
8	0.75	0.7
9	1.24	1.04
10	0.75	0.7
11	1.27	1.07
12	0	0
13–14	3.00	3.00

IC4

PIN NO.	FM	AM
1	4.2	4.2
2	0	0
3	3.00	3.00

TESTING CONDITION:

1. Without Any Input Signal And Setting Volume To Min.
2. Speaker Mode.
3. External Ant Is Not Used.
4. AM Is Received By 150kHz And Put On The Wide Bw,BFO Off & AM RF Gain Is Max.
5. FM Is Reveived By 98MHz And Put On The STEREo Position.
6. Load In Radio Battery 6.0V And Back Up Battery 4.5V.
7. Unit Of Measure:Volts.

IC106

PIN NO.	PLAY	REC
1	5.86	5.86
2	1.8	1.8
3	2.0	2.0
4	2.0	2.0
5	2.0	2.0
6	0	0
7	2.0	2.0
8	2.0	2.0
9	2.0	2.0
10	2.0	2.0
11	0	0
12	2.0	2.0
13	0	0
14	2.0	2.0
15	2.0	2.0
16	2.0	2.0
17	2.0	2.0
18	0	1.8
19	2.0	2.0
20	0	0
21	2.0	2.0

IC5

PIN NO.	FM	AM
1	5.8	5.8
2	0	0
3	3	3

IC1

PIN NO.	FM	AM
1	-1.38	-1.37
2	0	0
3	0	0
4	3.0	3.0
5	1.2	1.2
6	1.11	1.11
7	0.68	0.68
8	0.01	0.01
9	0.01	0.01
10	0	0
11	1.4	1.39
12	2.88	2.88
13	0	0
14	0	0

IC109

PIN NO.	FM	AM
1	5.9	5.9
2	0	0
3	3.2	3.2
4	0.6	0.6
5	5.7	5.7
6	5.9	5.9
7	0	0
8	1.4	1.4
9	0	0

IC108

PIN NO.	FM	AM
1	3.00	3.00
2	3.00	3.00
3	3.00	3.00
4	3.00	3.00
5	0	0
6	3.00	3.00
7	3.00	3.00
8	0	0
9	3.00	3.00
10	0	0
11	3.00	3.00
12	3.00	3.00
13	3.00	3.00
14	0	0
15-16	3.00	3.00

IC107

PIN NO.	FM	AM
1	5.9	5.9
2	0	0
3	3.2	3.2
4	0.6	0.6
5	5.7	5.7
6	5.9	5.9
7	0	0
8	1.4	1.4
9	0	0

IC2

PIN NO.	FM	AM
1-15	LCD SEGMENT	
16	1.57	1.57
17	3.2	0
18	0	3.2
19	0	0
20	0	0
21-24	LCD back plane	
25	3.7	3.7
26	3.7	3.7
27	2.15	2.15
28	1.08	1.08
29	3.66	3.66
30	0	0
31	0	0
32	0	0
33	0	0
34	0	0
35	0	0
36	0	0
37	3.66	3.66
38	3.2	
39	3.66	3.66
40	3.66	3.66
41	3.66	3.66
42	3.66	3.66
43	3.66	3.66

IC2

PIN NO.	FM	AM
44	3.66	3.66
45	3.66	3.66
46	0	0
47	0	0
48	0	0
49	0	0
50	0	0
51	0	0
52	0	0
53	3.7	3.7
54	3.7	3.7
55	0	0
56	3.7	3.7
57	0	0
58	1.47	1.47
59	1.50	1.50
60	3.1	3.1
61	3.7	3.7
62	3.7	3.7
63	3.7	3.7
64	3.7	3.7
65	3.7	3.7
66	3.7	3.7
67	3.7	3.7
68	3.7	3.7
69-80	LCD SEGMENT	

IC105

PIN NO.	FM	AM
1	3.66	3.66
2	3.66	3.66
3	3.66	3.66
4	0	0
5	1.05	0.88
6	0.75	0.70
7	0.94	0.79
8	0.75	0.7
9	0.97	0.82
10	0.75	0.7
11	1.05	0.88
12	0	0
13-14	3.66	3.66

TRANSISTORS

		FM	AM
Q1	E	0	0
	B	0.61	0
	C	0.07	5.30
Q2	E	0	0
	B	0	0.61
	C	4.93	0.07
Q3	E	0	0.92
	B	0	0
	C	0.46	5.96
Q4	E	0	0
	B	0.66	0.66
	C	0.07	0.07
Q5	E	0	0
	B	0	0
	C	6.00	6.00
Q6	E	0.93	0.94
	B	0.68	0.69
	C	2.63	2.63
Q7	E	0	0
	B	0.61	0.61
	C	9.3	1.2
Q8	E	0	0
	B	0	0.6
	C	5.8	0.3
Q9	E	0.51	0.51
	B	1.35	1.35
	C	3.00	3.00
Q10	E	3.00	3.00
	B	2.6	2.6
	C	3.00	3.00

		FM	AM
Q101	E	0	(HV) 0
	B	0	(HV) 0.6
	C	0	(HV) 0
Q102	E	0	0
	B	0	0
	C	4.02	0
Q103	E	0	0
	B	0.65	0
	C	4.00	0
Q104	E	0	0
	B	0.6	0.6
	C	0	0
Q105	E	0	0
	B	0	0.7
	C	0	0
Q106	E	0	(SSB) 0.02
	B	0	(SSB) 0.6
	C	0	(SSB) 1.36
Q107	E	0	(SSB) 0
	B	0	(SSB) 0.6
	C	0	(SSB) 1.2
Q108	E	0	0.24
	B	0	0
	C	0	4.75
Q109	E	0	0.37
	B	0	0
	C	0	3.7
Q110	E	0	0.37
	B	0	0
	C	0	3.7

TRANSISTORS

		FM	AM
Q111	E	0	0.5
	B	0	0
	C	0	5
Q112	E	0	0
	B	0	0.68
	C	0	1.12
Q113	E	0	0.3
	B	0	0.66
	C	0	1.2
Q114	S	0	(SSB) 0
	G	0	(SSB) 0.6
	D	0	(SSB) 0
Q115	E	3.00	3.00
	B	4.9	2.4
	C	0	2.9
Q116	E	0	0
	B	0.6	0
	C	0	1.5
Q117	E	2.7	2.7
	B	3.3	3.3
	C	2.8	2.8
Q118	E	0	0
	B	0.72	0.72
	C	1.73	1.73
Q119	E	0.6	0.6
	B	1.3	1.3
	C	1.5	1.5
Q120	E	0	0
	B	0.7	0.7
	C	1.64	1.64

		FM	AM
Q121	E	0	0
	B	0.25	0.2
	C	3.00	3.00
Q122	E	0	0
	B	-1.88	(TV) 0
	C	-0.38	(TV) 0
Q123	E	0	(TV) 0
	B	-0.38	(TV) 0
	C	5.62	(TV) 0
Q124	E	5.67	(TV) 5.67
	B	5.1	(TV) 5.5
	C	5.64	(TV) 0.3
Q125	S	5.6	(TV) 5.6
	G	5.5	4.9
	D	0	5.5
Q126	E	0	3.00
	B	0	2.45
	C	0	0
Q127	E	0	0
	B	0	0.6
	C	1.36	0
Q128	E	0	0
	B	0.6	0
	C	0	1.22
Q129	E	0	0
	B	0	0
	C	0	2.44
Q130	E	5.55	5.55
	B	4.86	5.43
	C	5.5	0

STAND BY REL

		OFF	ON
Q140	E	6.0	6.0
	B	6.0	5.6
	C	0	5.9
Q141	E	0	0
	B	0	0.6
	C	5.9	0.2
TYPE		PLAY	REC
Q152	E	0	0.04
	B	0	0.5
	C	5.9	1.5

LIGHT

PIN NO.	OFF	ON
1	5.8	5.8
2	5.8	5.8
3	0	0
4	0	5.8
5	5.8	5.8

IC103

PIN NO.	FM	AM
1	5.6	5.6
2	0	0
3	3.0	3.0
4	5	5

		FM	AM
Q132	E	0	(LV) (HV) 0.2
	B	0	(LV) (HV) 0
	C	0	(LV) (HV) 4.5
Q133	E	8.3	2
	B	8.1	1.8
	C	1.5	2.8
Q134	E	0	0
	B	0	0.66
	C	0	0
Q135	E	0	0
	B	0	0
	C	0	0.66
Q136	E	0	5.47
	B	0	5.44
	C	0	0
Q137	E	0	5.47
	B	0	4.86
	C	0	5.44
Q138	E	0.3	0.3
	B	0.9	0.9
	C	1.9	1.9
Q139	E	0.3	0.3
	B	0.9	0.9
	C	1.9	1.9
Q142	E	6.0	6.0
	B	5.4	5.4
	C	5.8	5.8
Q143	E	6.0	6.0
	B	5.4	5.4
	C	5.9	5.9

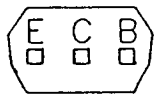
		FM	AM
Q144	E	0	0
	B	0.6	0.6
	C	0.2	0.2
Q147	E	6.0	6.0
	B	5.9	5.9
	C	0	0
Q148	E	0	0
	B	0	0
	C	0	0
Q151	E	0	0
	B	0	0
	C	0	0
Q158	E	0	0
	B	0	0
	C	0	0
Q159	E	0	0
	B	0	0
	C	0	0

		RADIO	TAPE
Q131	E	3.0	3.0
	B	2.4	5.4
	C	2.96	0.2
Q149	E	0	6.0
	B	0	5.3
	C	0	5.9
Q150	E	0	0
	B	0	0.6
	C	0	0.3
Q153	E	0	1.78
	B	0.47	2.38
	C	0	1.8
Q154	E	0	0 (CrO2)
	B	0	0.66 (CrO2)
	C	0	0 (CrO2)
Q155	E	0	5.47 (CrO2)
	B	0	4.86 (CrO2)
	C	0	5.44 (CrO2)
Q157	E	0	0
	B	0.6	1.01
	C	0.2	0.42
Q146	E	5.6	5.7
	B	4.8	5.3
	C	5.55	0.4
Q145	E	4.6	1.6
	B	4.7	1.1
	C	2.5	1.3

SEMICONDUCTOR LEAD IDENTIFICATIONS

Transistors

2SK212E



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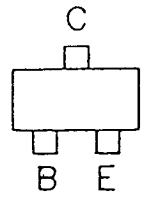
2SC2839E



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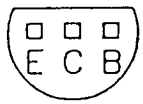
2SA812M6/M7
2SD1048X6/X7



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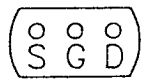

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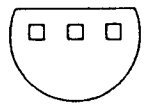
2SK291Q/R

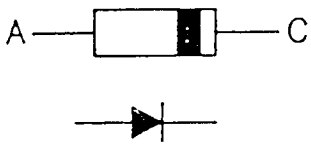
SVC-203



SVC-201SP

(E:Emitter C:Collector B:Base S:Source G:Gate D:Drain)

Diodes



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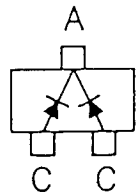
IN60

1SS98T

1SS238T
UZ-15BH

RL-S4148



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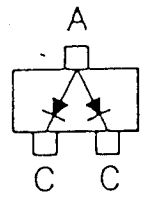
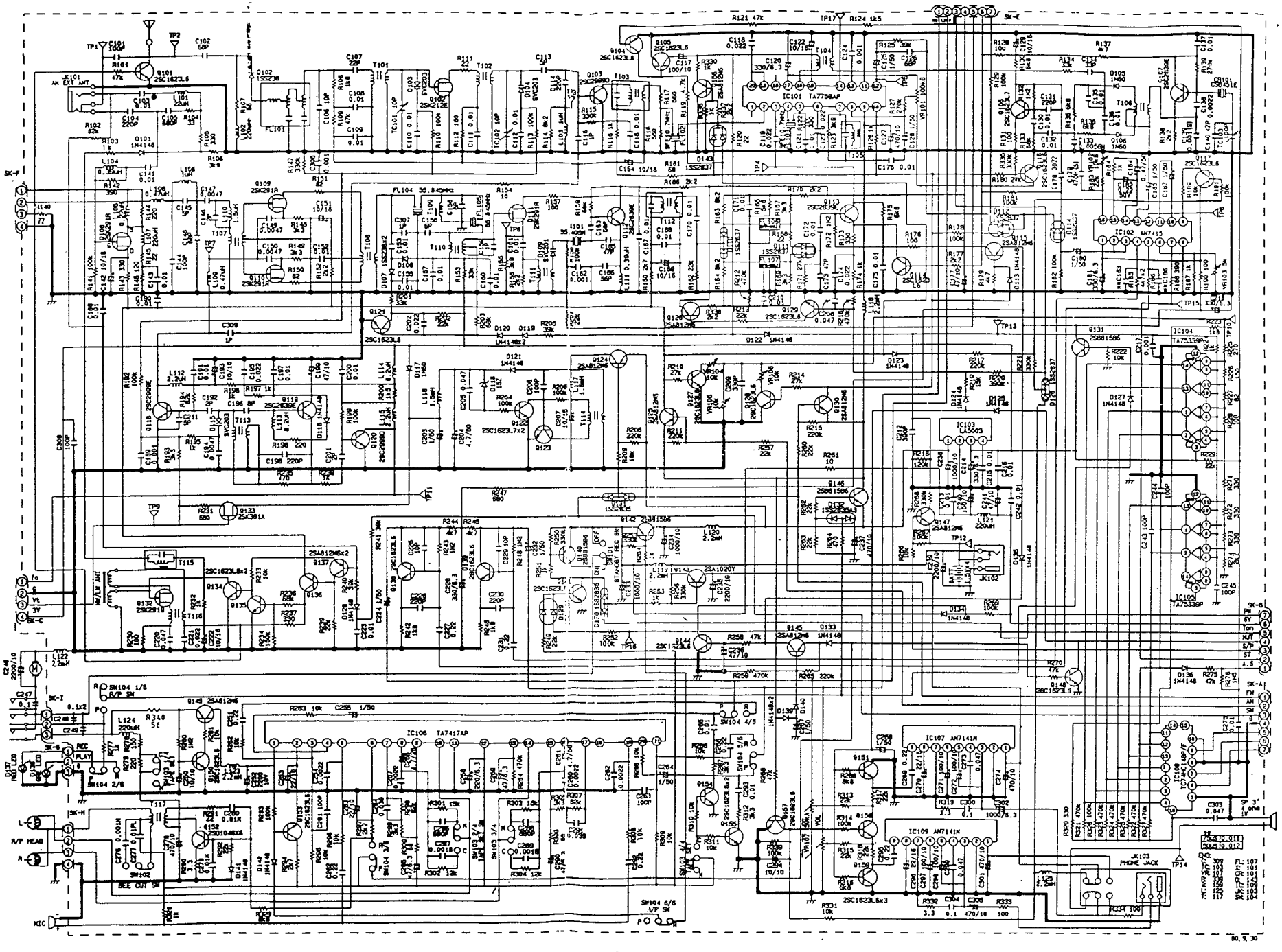


1S2835-T2B-A3

(A:Anode C:Cathode)

SCHEMATIC DIAGRAM



SCHEMATIC DIAGRAM